THE USSR AND EASTERN EUROPE AGRICULTURAL SITUATION

SUMMARY

Agricultural production in the USSR in 1965 fell sharply from the exceptionally high level attained in 1964. In the East European countries as a group, output remained unchanged. This was the result, however, of good performance in Poland and Rumania, offsetting sharp declines in Czechoslovakia and Yugoslavia. Production in Hungary, East Germany and Bulgaria changed little between 1964 and 1965 (table 1).

Compared with output in 1957-59, USSR agricultural production was up 9 percent but per capita output was below the 1957-59 level. Output in Eastern Europe remained at 13 percent above the 1957-59 level, with Poland and Rumania more than 20 percent above that level and East Germany and Hungary showing less progress. Czechoslovakia even fell below the 1957-59 average.

The influence of that all important variable, weather, was evident in agricultural performance throughout the region. With few exceptions weather was favorable during the fall and winter of 1964/65, and good to record winter crops were harvested in 1965. In the USSR, winter wheat and rye yields and output were well above 1963 and 1964. Poland produced large crops of wheat, rye, and rapeseed, and record winter wheat crops were produced in Hungary, Rumania and Bulgaria. East Germany and Czechoslovakia did not fare so well, but winter grains and oilseed crops in these countries were nevertheless average or better.

Weather conditions for spring sown crops were generally unfavorable throughout the region. Heavy rains and floods damaged crops in the Danubian countries and Czechoslovakia during the spring only to be followed by drought in most of the same countries throughout the summer and fall. A drought much like that of 1963 damaged spring grains heavily in the eastern portions of the USSR. In the northern tier of East European countries, particularly East Germany and Czechoslovakia, heavy rains during the summer and fall had as much detrimental effect upon crops as drought had in the southern countries.

Spring crops, as a consequence, were generally poor in all of Eastern Europe and the USSR. In most of the countries of Eastern Europe, feed grain supplies were much below 1964 and generally in short supply. Production of spring-sown oilseeds, such as sunflower seed, declined in most of the countries as did fruit and vegetable production. Potato production was down in every country except Rumania, and sugar beet output was down in all countries. The largest declines were in Czechoslovakia. This further reduced the livestock feed supply since both are used widely for livestock feed.

In most of the USSR and Eastern Europe, production of livestock products rose substantially and, with the exception of Hungary, livestock numbers were maintained or increased. Considerably larger supplies of meat, milk, and eggs should be available in the region in

Table 1.--USSR and Eastern Europe: Indices of agricultural production, total and per capita by country, 1960-65 1/
(1957-59 = 100)

Country	Total						Per capita					
	1960	1961	1962	1963	1964	1965	1960	1961	1962	1963	1964	1965
USSR	101	107	107	101	117	109	97	102	100	93	106	98
Eastern Europe:												
Poland	109	120	108	118	118	122	106	115	102	110	109	111
East Germany	112	85	97	98	102	103	113	87	99	100	104	103
Czechoslovakia	102	99	95	104	106	94	102	98	93	101	103	94
Hungary	104	97	103	104	105	106	103	96	101	102	104	103
Rumania	108	116	104	110	116	121	106	113	100	106	110	114
Bulgaria	109	104	111	111	118	118	106	101	107	106	112	111
Yugoslavia	102	99	104	111	118	109	103	96	100	107	112	101
Total	107	106	103	110	113	113	106	104	101	106	108	107
Total USSR and Eastern Europe	103	107	106	104	116	111	101	103	100	97	107	102

1/ Indices for the USSR and Eastern Europe were reconstructed in 1965 to correspond with the methodology of the indices published in The World Agricultural Situation, FAER-28, Economic Research Service, U.S. Department of Agriculture. The indices are now based on the value of calendar year crop and livestock product output, weighted in terms of 1957-59 average West European producer or wholesale prices, in U.S. dollars. Deductions are made for the value of crops used to produce livestock output. This deduction is based on the value of the output assigned to feed in Food Balances for 8 East European Countries, 1959-61, ERS-Foreign 124, Economic Research Service, U.S. Department of Agriculture.

Note: Differences between index numbers in this report and in The World Agricultural Situation, FAER-28, Economic Research Service, U.S. Department of Agriculture, are explained by more recent data.

1965/1966. But during 1965 foot-and-mouth disease appeared in the USSR and Eastern Europe. It was reported widespread by the end of the year.

Because of this pattern of production, the USSR purchased over 9 million tons of wheat from Western countries for delivery during 1965/66, and many East European countries have purchased feed grains from the West. For these reasons the USSR and Eastern Europe will be heavy net grain importers during 1965/66 although the Soviet Union is still expected to honor her grain export commitments to Eastern Europe.

The third bumper cotton crop in the Soviet Union in as many years is expected to raise the availability of cotton in Eastern Europe and the USSR. Although production of oilseeds and sugar beets fell in 1965 from the large outputs of 1964, it was nevertheless generally high, and availability of these commodities is expected to be good.

Probably the most significant agricultural change in 1965 was in policy. For most of the countries 1965 was the last year of a major plan period and the plans for agricultural production during the period 1966-70 were presented by the respective governments. In the USSR the leadership of the government was new and the policies announced marked a substantial change from those of Khrushchev. Although there are many individual country differences, the agricultural programs put forth in every country had much

in common. Most of the governments looked upon performance in the past 5 years as unsatisfactory at best and cause for considerable concern. The major devices relied upon by all the countries in their efforts to increase output are to be increased inputs of capital, fertilizer, and machinery, and higher prices for agricultural products purchased by the government. Changes in the management of agriculture and in the methods of planning and purchasing of agricultural products were also announced. Those countries which have collectivized the least--Poland and Yugoslavia--indicated little willingness to speed collectivization. Their programs contain considerable support for the private sector as well as the socialized, although collectivization remains a long-run goal and the socialized sector is heavily favored.

In the other countries of Eastern Europe, where collectivization is generally completed, the agricultural programs of the governments indicate that the primary objective is to attempt to make the existing agricultural system work by allocating more inputs to agriculture, and giving it a higher relative standing within the economy. The heavy imports of wheat in the past few years and difficulties with livestock feed supplies have caused the governments of most of these countries to designate increasing grain production as the most important agricultural objective of the next 5 years.

SITUATION BY COUNTRY

SOVIET UNION

Production: Agricultural output in the Soviet Union declined in 1965 from the record high of 1964. It was still well above the disastrously low level of 1963 and above the 1957-59 average. The USDA index of Soviet agricultural output indicates that total output was down 7 percent compared with 1964, but up 8 percent compared with 1963 and 9 percent compared with the 1957-59 average. Per capita agricultural output in 1965 was 2 percent below the 1957-59 average (table 1).

The 7-Year Plan which culminated in 1965 was thus virtually a failure as far as agriculture was concerned, having called for an increase in gross agricultural production of 70 percent and achieving only something in the neighborhood of 10 percent. 1/

Weather conditions in 1964/65 were generally favorable for winter crops, but unfavorable for spring crops, especially grains in the eastern portions of the country. Drought conditions similar to those of 1963 plagued the major spring grain regions of the New Lands, reducing yields sharply. This area had produced a bumper crop in 1964. Good fall, winter, and spring conditions in western, central, and southern European Russia contributed to a good crop of winter grains, primarily wheat and rye. A cool, wet summer and fall, however, retarded growth of spring-sown crops and imposed considerable difficulties on the harvest of grains, reducing the final harvest and lowering the quality of harvested grain. Nevertheless, the winter grain crop was well above the poor harvests of 1963 and 1964. The good winter grain crop could not offset the sharp decline in spring grains, however, and a much lower total grain crop--both food and feed grains--was harvested. With the exception of oats, the estimated area harvested was below 1964 and yields of spring grains were down sharply (table 2).

A smaller grain crop, especially of wheat in the New Lands, and a more lenient policy with respect to compulsory deliveries of grain to the government, necessitated imports of more than 9 million tons of wheat during 1965/66. With reduced grain exports by the USSR, 1965/66 will approach 1963/64 in terms of net grain imports.

The potato crop dropped sharply from the record high 1964 level, but was well above the output of 1962 and 1963 and only a little below 1957-59 average output. The potato area remained unchanged, but yields were lower because of cool, wet weather which retarded growth, increased disease problems, and delayed the harvest. The output of vegetables and fruits was also down in 1965.

Sugar beet output was down because of reduced area and less favorable growing conditions than those of 1964. Nevertheless, production was much above the 1957-59 average and every other year save 1964. Sugar production from the 1965 crop will add additional

1/ The Soviet index of gross output, as revised in Narodnoe Khozyaystvo SSSR v 1964 g., p. 246, places output in 1964 at 13 percent above 1958. The Soviet 1965 plan fulfillment report indicates that the index will rise 1 percent in 1965 (Sel'skaya zhizn', February 3, 1966).

Table 2.--Soviet Union: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65 1/

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 2/	1957-59 average	1962	1963	1964	1965 2/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	54,693	54,400	40,000	57,700	46,500	66,232	67,411	64,609	67,900	65,000
Rye	15,148	13,716	11,700	12,800	14,500	17,682	16,900	15,000	16,800	17,000
Barley	8,444	15,674	16,400	23,800	19,000	9,491	16,300	20,500	21,700	20,000
Oats	11,816	5,600	3,700	3,900	4,600	14,396	6,900	5,700	5,700	6,000
Corn 3/	5,773	9,800	8,500	9,200	4,800	3,735	7,000	7,000	5,100	3,200
Potatoes	78,495	62,730	64,620	83,700	75,000	9,614	8,700	8,500	8,500	8,500
Sugar beets (factory) 4/	45,988	47,435	44,052	80,300	70,000	2,453	3,170	3,750	4,110	3,917
Sunflower seed	3,203	4,416	3,938	5,511	4,876	3,753	4,390	4,390	4,610	4,847
Cotton, lint 5/	1,499	1,462	1,771	1,795	1,904	2,131	2,390	2,480	2,460	2,460
Livestock products:										
Meat 6/	5,652	6,685	7,255	5,965	6,900					
Poultry 7/	638	800	800	600	750					
Other meat 8/	204	240	240	160	200					
Milk, cows	49,600	54,600	52,000	54,000	58,000					
Wool	319	367	369	345	325					
	Billion units									
Eggs	23.6	30.1	28.5	26.7	28.0					
Livestock: 9/	Million head									
Cattle	66.3	82.1	87.0	85.4	87.1					
Hogs	44.6	66.7	70.0	40.9	52.8					
Sheep	119.4	137.5	139.7	133.9	125.2					
Horses	11.9	9.4	9.1	8.5	7.9					

1/ USDA estimates unless otherwise indicated; Soviet estimates of area and livestock numbers. 2/ USDA preliminary estimates. 3/ Corn for grain. 4/ Soviet production estimate. 5/ 34 percent of Soviet estimate of unginned cotton production. 6/ Beef, veal, pork, mutton, lamb, and goat, carcass weight. 7/ Dressed weight. 8/ Horse, rabbit, deer, camel. 9/ Number as of Jan. 1. Note: See Table 27 for conversion equivalents.

Sources: Sel'skoe khozyaystvo SSSR, Narodnoe khozyaystvo SSSR v 1964 g. and SSSR v tsifrakh v 1964 g.

large supplies to the reported output of 9.4 million metric tons of refined sugar produced from the 1964 sugar beet crop.

The output of oilseeds--of which sunflower seeds are dominant--was down in 1965 compared with the exceptionally high output of 1964, but relatively high compared with other years and the 1957-59 average. Cottonseed from the 1965 record harvest of cotton will add substantially to the total supply of oilseeds.

Cotton production achieved another record in 1965 --reported at 5.7 million tons unginned--despite water problems and no increase in area. This is the third record cotton crop in a row and reflects the effects of high prices, large inputs, and favored treatment on an irrigated crop in the Soviet Union.

The livestock sector showed a considerable recovery in 1965 after sharp declines in numbers in 1963 and in output in 1964. By the end of 1965 cattle and cow numbers were up to new highs, substantially above the levels of 1957-59. Hog numbers recovered sharply from the drastic decline in 1963, reaching almost 60 million head by the end of 1965. Sheep numbers increased during 1965, but were still below the level of 1962.

The impact of foot-and-month disease, which had spread quite extensively in the Soviet Union by late 1965, was not particularly noticeable in either livestock numbers or output at the end of the third quarter of 1965. During 1965 the output of livestock products increased dramatically over 1964's shortfalls. Meat and poultry production was still lower than the heavy slaughter output of 1963, but above earlier years and well above the 1957-59 average. Milk production achieved a record high and egg output was up sharply, although still below the output of 1962 and 1963. The widespread presence of foot-and-mouth disease during the last part of 1965 and a less favorable feed supply than during 1964 could curtail the growth of livestock output in early 1966.

With the important exception of grains, agricultural output in the Soviet Union was fairly good in 1965. This performance undoubtedly reflects the impact of the significantly improved input situation since 1961.

Inputs: Although a great many factors affect the level of agricultural output in the USSR, among which weather and governmental policy are highly significant, the impacts of such inputs as capital, machinery, and fertilizer, and higher farm prices are also very important. The decidedly adverse weather conditions in 1963 and 1965 have partly obscured the fact that after having stagnated during the period 1957-61, inputs of capital, machinery, and fertilizer, the level of farm prices, and farm incomes have increased very rapidly.

Total capital investment in agriculture in the USSR is composed of the direct investment by the government and the investments by collective farms (table 3). The amount of investment by collective farms is a function of prices paid by the government for government purchases of

Table 3.--Soviet Union: Investment in agriculture, 1950-1964 1/

Year	Total agricultural investment	State investment: Total	State investment: For productive purposes only	Collective farm investment
	Million rubles			
1950	1,810	1,059	977	751
1951	2,034	1,113	1,025	921
1952	2,140	1,067	971	1,073
1953	2,163	935	881	1,178
1954	3,227	1,792	1,536	1,435
1955	4,385	2,265	1,992	2,120
1956	4,673	2,409	2,118	2,264
1957	4,907	2,703	2,343	2,204
1958	5,526	2,683	2,279	2,843
1959	6,021	2,495	2,021	3,526
1960	6,227	3,061	2,471	3,166
1961	6,382	3,727	2,984	3,155
1962	7,454	4,180	3,386	3,274
1963	8,213	4,797	3,904	3,416
1964	9,695	5,786	4,819	3,906

1/ Data exclude investment in establishing herds, capital repair, tree plantings, and expenditures by collective farms for machinery transferred from machine tractor stations to collective farms in 1958 and 1959.

Source: Narodnoe khozyaystvo SSSR v 1964 g., Moscow 1965, p. 517.

agricultural products, other sales of agricultural products by the collective farms, the level of production, and government policy concerning the amount of a farm's income which must be invested. The major portion of capital investment in agriculture is that called "investment for productive purposes." Column 3 of table 3 reflects the direct contribution by the Soviet government to agriculture for primarily productive purposes (excluding expenditures for schools, housing, clubhouses, and so forth). Between 1953, when Stalin died, and 1955, when the great burst of government concern with opening up the New Lands subsided, state investment in agriculture for productive purposes rose from 881 million rubles to just under 2 billion rubles. From 1956 until 1961 the contribution of the Soviet government to capital investment in agriculture remained relatively unchanged at between 2 and 2.5 billion rubles. Since total state investment was increasing while state investment in agriculture remained constant the relative position of agriculture in the economy fell. It was only the rapidly increasing collective farm investment which kept total investment in agriculture growing during this period. Beginning in 1961, however, the government again commenced to pour progressively larger quantities of capital into agriculture. State capital investment in agriculture for productive purposes in 1964 was twice as high as in 1960 and more than double the 1957-59 average.

Collective farm capital investment has increased steadily since 1962, reflecting substantial increases in farm prices in 1962 and 1963 and the good 1964 harvest. Because of these trends, total capital investment in agriculture is a third larger than it was in 1960.

The deliveries of mineral fertilizer to agriculture doubled between 1950 and 1958, and although they continued to increase after 1958 there was a slump in the rate of increase until 1962 when deliveries began to increase dramatically (table 4).

Table 4.--Soviet Union: Deliveries of mineral fertilizer and selected types of machinery to agriculture, selected years, 1950-1965

Year	Fertilizer			Machinery		
	Gross weight	Plant nutrients		Tractors	Trucks	Grain combines
		Total	Per hectare of sown area			
	1,000 metric tons	1,000 metric tons	Kilograms	Thousands	Thousands	Thousands
1950	5,350	1,261	8.6	92.2	87.1	45.8
1953	6,570	1,550	9.9	76.2	68.9	41.0
1958	10,626	2,459	12.6	157.5	102.1	64.9
1959	11,114	2,577	13.1	144.3	76.3	53.1
1960	11,404	2,624	12.9	157.0	66.1	57.0
1961	12,073	2,717	13.3	185.3	69.7	70.0
1962	13,645	3,094	14.3	206.0	82.6	79.2
1963	15,965	3,594	16.4	239.3	68.8	79.6
1964	21,961	5,040	23.7	222.5	63.0	78.6
1965 1/	26,500	6,095	29.3			

1/ Estimated on the basis of reported deliveries in gross weight and reported sown area.

Sources: Narodnoe khozyaystvo SSSR v 1964 g., Moscow 1965, pp. 267, 338, and 389, and Vestnik statistiki, No. 5, 1964.

Mineral fertilizer deliveries to agriculture have doubled compared with 1960; much of this increase came after 1962. Most of the fertilizer is still used on industrial crops--cotton, sugar beets, and oilseeds-- and explains in large part the increase in output and yields of these crops in the past few years. However more fertilizer is being applied to grains. In 1964 it was reported that 7 million tons were to be applied to grain crops harvested in 1964 2/ and larger quantities were undoubtedly used in 1965.

After increasing sharply between 1953 and 1957, primarily to supply equipment for the New Lands project, annual deliveries of machinery to agriculture either fell off in absolute terms or failed to increase (table 4) in 1961 and 1962 annual deliveries of tractors, trucks and grain combines began to increase, but in 1964 there was a decline in annual deliveries.

Although it is difficult to construct a satisfactory input-output relationship between these inputs and agricultural production in the Soviet Union, the upward trend in these indicators is important. It shows that the Soviet government was concerned with the lag in inputs by 1962 and that, although weather in 1963 and 1965 was poor, the increased output of 1964 was due in part to a somewhat improved economic base. The impact of these inputs is probably least noticeable in the marginal New Lands areas on which the Soviet government depends so heavily for its wheat procurements. Increased inputs in recent years have not made it possible to avoid problems in the basic food grains, but they have produced sizable increases in the output of technical crops.

Policy: 1965 was the first full year without Khrushchev, who dominated Soviet agricultural policy for more than a decade. It witnessed the emergence and development of the new Brezhnev-Kosygin brand of agricultural policy which, while not touching the fundamentals of collectivization, reversed or decelerated some aspects of Khrushchev's policy and modified or accelerated others.

Both Khrushchev and his successors were confronted, when they took office, with stagnation of agricultural production in the face of a rising quantitative and qualitative demand for farm products--demand occasioned by rapid growth of population, urbanization, increasing purchasing power and rising expectation of the improved standard of living long promised by the Communists. Many of the faults ascribed to Khrushchev by his successors are similar to those he leveled against Stalin a decade earlier -- arbitrariness, disregard of economic laws, excessive pressure on the private sector, and neglect of incentives. But most of the criticism has dealt with his last 5 years of leadership when "large goals were set but the necessary economic resources were insufficiently provided...." The criticism has in essence been that he went too far in meddling with affairs which were properly the concern of professional agriculturalists and farm managers, and not far enough in raising incentives and economic inputs in agriculture.

Changes in agricultural policy, aiming at a rapid expansion of agricultural production, began shortly after the ouster of Khrushchev in October 1964. These steps were taken to clear the way for the big action which came at a session of the central committee late in March 1965, when a comprehensive agricultural program, introduced by Brezhnev, was adopted and put into operation by a series of subsequent government decrees. The program dealt with government procurements (purchases) of farm products, increased farm prices and incentives, credit and taxation, capital investment and inputs, and the land use pattern.

Government procurement quotas for grain and a large number of other crops, were fixed for each of the 6 years from 1965 to 1970. Each republic and its subdivisions and each collective and state farm was in turn allotted firm annual quotas of compulsory deliveries during this period.

2/ Sel'skaya zhizn', February 11, 1964.

The original 1965 goal of 65 million tons of grain was reduced under the new program to 55.7 million tons; this is also the annual target for the remainder of the decade. The 1965 total grain procurement target was subsequently further reduced, probably because of the poor harvest, to 53 million tons, compared with 68.3 million tons procured in 1964, and 49.4 million on the average during 1959-63.

The setting of firm quotas over a period of years and the certainty it provides should facilitate and strengthen planning of land use by farm managers. It may help to make more effective the increased planning authority of collective and state farms given by the legislation of March 1964 on decentralization of agricultural planning. 3/ Such an improvement is predicated first on equitable setting of quotas between different farms; and second on their actually remaining firm and not being increased arbitrarily.

Brezhnev has stated that the government's grain requirements cannot be fully met by the planned procurements, and extra quota purchases will be required. For such purchases of the principal food grains, wheat and rye, the government will pay 50 percent in excess of the basic price. The basic collective farm price was also raised an average of 12 percent for wheat and 23 percent for rye. 4/ But a much sharper increase of 53 percent for wheat and rye prices of collective farms was decreed for the western and north central regions of the Non-Black Soil Area. Government purchase prices for grain from state farms were also raised substantially. In addition to the variation of grain prices in the 6 large geographical regions, further differentiation of grain prices is supposed to bring them more in line with varying production cost. The existence of serious disparities between prices and costs, making grain production unprofitable in a number of regions, was claimed by Soviet economists.

Prices of buckwheat, rice and the higher grades of millet were also increased sharply. The buckwheat price was raised from 200 rubles to 300 rubles per ton and rice from 220 to 300 rubles. Rice was formerly largely imported from China, but with the increasing strain in Sino-Soviet relations, the Soviet government has been aiming at self-sufficiency in rice. The prices of barley and oats were also raised by 20 to 100 percent, but only for the northern and north central regions of the country. Prices of sunflower seed delivered by state farms were raised to equal those paid to collective farms. For sunflower seed purchased by the government from collective farms in excess of the average delivered during 1962-64, the price was doubled beginning with the 1965 harvest. 5/

For livestock products also, a procurement schedule for each of the years 1965-70 was fixed, but unlike grains it is on an increasing scale. The new 1965 quotas were lower than Khrushchev's goals for 1965. Likewise the new 1970 procurement goals are below the 1970 targets set by the Khrushchev regime--for meat they're down by 37 percent; for milk, by 28 percent. Despite a substantial reduction, the new livestock quotas still appear rather steep. For meat and eggs, however, the actual rates of increase during 1961-65 compared to the preceding 5-year period were greater than those now planned.

No revised goals for livestock production, as distinguished from procurements, have been announced, but the reduction of grain procurements would presumably make more grain available on farms for animal feed, which has been a bottleneck in livestock production. Increased feed supplies from this source and from expected improvement of yields, if they materialize, would stimulate livestock production and facilitate larger procurements. Another incentive to greater livestock production and procurements is higher prices. Livestock prices were

3/ See the 1965 Eastern Europe Agricultural Situation, ERS-Foreign 115, Economic Research Service, U.S. Department of Agriculture, pp. 12-13.

4/ R. Gumerov, Finansy SSSR, No. 8, 1965, p. 8.

5/ Izvestia, March 27, 1965.

increased a number of times under Khrushchev. Yet livestock product prices were deemed insufficient by the post-Khrushchev regime to make production profitable, and further price increases were decreed. First, the procurement price of milk was raised an average of 22 percent beginning January 1, 1965. The butterfat content standard, on the basis of which milk procurements are priced, was lowered. At the same time prices of skimmed milk sold to farmers for livestock feeding were reduced from 30 rubles per ton to 10 rubles. 6/

Since May 1, 1965, "increments" have been added to livestock procurement prices, varying regionally in accordance with the profitability of the livestock industry. The term "increment" (nadbavka) instead of an increased procurement price--as in the case of crops--is used deliberately to indicate the temporary character of the measure. 7/ No such additional payments are made for government purchases of privately owned livestock, but no compulsory deliveries of private livestock are required.

The government thus serves notice that under certain undefined conditions it may in the future reduce livestock prices. In the meantime considerably higher prices are paid to the farms. In the Russian Republic (RSFSR), for instance, collective farms will receive an average of nearly 32 percent more for average quality cattle. State farms there will receive 35 percent more. In Kazakhstan, where production costs are lower, state farms will receive 20 percent more. 8/ The price of hogs was increased by 33 percent for collectives of the Russian Republic and the Ukraine. The price for sheep and goats was also raised and in the mountainous regions even doubled.

It is significant that the 1965 farm price increases were not accompanied by higher retail prices in state stores as happened in 1962. Even with higher retail prices it was claimed that the government incurred losses in the procurement, processing and sale of meat. With increased meat procurement prices, still higher losses are expected. Whether the Soviets will be more successful in reducing livestock costs in the future than they were in the past is uncertain. But increased incentives to farm workers, made possible by higher prices, and the liberal policy towards the private sector, if it should continue, should benefit the livestock industry. So would the planned improvement of yields of crops, hayland and pastures if it materializes.

It was estimated that, as a result of the various price changes, collective and state farms would receive in 1965, on the basis of planned procurements, an additional 3.4 billion rubles, or 12 percent more than in 1964. 9/

In addition to raising prices, other measures of financial assistance to collective farms were adopted. Debts totaling 2 billion rubles owed by economically weak collective farms to the State Bank were cancelled. Included were long-term loans of 1,450 million rubles and short-term loans of 560 million rubles. The cancelled long-term loans constitute close to 30 percent of the total issued during the 6 years 1959-64. 10/ That the short-term loans cancelled made up a large part of such loans outstanding can be seen from the fact that at the beginning of 1964 such loans amounted to 804 million rubles. 11/ Also cancelled was the remaining indebtedness, amounting to 120 million rubles, of collective farms to the state for equipment, facilities and machinery acquired from machine-tractor stations and equipment repair stations. In addition, collective farm repayment of advances made by government procurement agencies amounting to 120 million rubles was

6/ N. Gusev, Ekonomika sel'skogo khozyaystva, No. 6, 1965, p. 14.

7/ R. Gumerov, Finansy SSSR, No. 8, 1965, p. 12.

8/ Savel'ev, Ekonomika sel'skogo kyozyaystva, No. 6, 1965, p. 25.

9/ Gusev, Ekonomika Sel'skogo Khozyaystva, No. 6, 1965, p. 14. It is impossible to assess at this juncture the effect of foot-and-mouth disease which began during the latter part of 1965 and is now widespread. It may have seri consequences for Soviet livestock.

10/ S. Nosyrev, Dengi i kredit, No. 6, 1965, p. 34.

11/ Narodnoe' khozyaystvo SSSR v 1963 g., p. 658.

deferred until 1970-74. As a result of these measures, payments of collective farms in 1965 will be reduced by approximately 300 million rubles, equivalent to 1.7 percent of their 1964 cash receipts.

Effective in 1966 the collective farms' income taxes will be reduced approximately one-half through changes in the taxable base and rates. 12/ This replaces Khrushchev's liberalization which granted tax exemptions to economically weak collective farms and tax exemptions on income from livestock production.

The government has taken over from collective farms the financing of land reclamation in the more humid regions, including such operations as drainage and clearing of land, liming of acid soils, and supplying farms with peat. An area of about 15 million acres is to be reclaimed during the period 1966-70, as compared with 7.4 million reclaimed during the past 20 years. Irrigation also began to claim more serious attention after the disastrous 1963 drought. In the cotton growing regions of Soviet central Asia and in the southern regions of the European USSR, irrigation is planned for an area of more than 7.4 million acres as compared with 5.7 million acres irrigated during the past 20 years. The total irrigated area amounted to over 23 million acres in 1962, 13/ but a considerable proportion of this area became alkaline or swampy and unusable for crop production. This no doubt led Brezhnev to state at the March 1965 Plenum that "... it is necessary categorically to forbid construction of irrigation networks without providing for drainage."

Increased capital investment and inputs were emphasized by the post-Khrushchev administration. These are essential if increased productivity and capital intensification is to take place in Soviet agriculture. At the March 1965 Plenum Brezhnev announced a new state capital investment program in agriculture of 41 billion rubles for the period 1966-70. State agricultural investment would average 8.2 billion rubles per year during 1966-70, or double the 1961-65 average and nearly triple the 1956-60 average. 14/ The annual plan for 1966 announced in December 1965 specified a record 6.1 billion rubles of state investment in agriculture, or 15.6 percent above 1965. If a similar rate of increase is maintained during 1967-70, the program's goal of 41 billion will be reached. The share of agricultural investments in the total state investment, indicating the importance of agriculture in the allocation of resources, also is planned at a record of 15.1 percent according to the 1966 plan. This share declined from 13.1 percent in 1955 (during the height of the "New Lands" campaign) to 8.9 percent in 1959 and then started to climb again, reaching 14 percent in 1965.

In addition to agricultural investment by the state, collectives make investments on their farms out of their own funds (table 3). At the March 1965 Plenum, Brezhnev set a goal of 30 billion rubles of collective farm capital investment for 1966-70, or about double the level of 1959-63. In contrast to the State investment program which includes only investment for productive purposes, the 30 billion rubles of collective farm investment appears to cover both productive and unproductive investment. In addition it would appear that roughly half the amount to be invested by the collectives will be financed by long-term loans from the government. In the past the high level of collective farm investment was burdensome on many collective farms and was instrumental in depressing the earnings of collective farmers, who are residual claimants to the income of the farms. The combination of increased government long-term loans and the increased collective farm income to be expected from the financial measures discussed above, should lighten this burden somewhat.

The planned investment seems steep, especially in view of the vulnerability of Soviet agriculture to adverse weather and the heavy burden of present investment levels on collective

12/ V. Paevsky, Finansy SSSR, No. 6, 1965 p. 76.

13/ Narodnoe khozyaystvo, SSSR v 1963 g., p. 306.

14/ The figures are for so-called state productive investment unless otherwise specified.

farms. While the post-Khrushchev leadership has proclaimed the importance of economic (material) incentives for workers, no new arrangements or safeguards were provided with respect to wages in collectives, leaving the question practically to the discretion of the management of each farm. It remains to be seen how actively the government will pursue the objective of increasing the earnings of collective farmers.

A step to increase the real income and economic incentives of the farm population was taken by the government in abolishing the price differential between the urban and rural retail outlets, in effect lowering the level of retail prices in the rural areas. But the problems of the lack of availability and inferior quality of supplies and marketing services in these areas still remain.

As was pointed out in last year's issue of this report, the question of increasing economic incentives to farmers and other segments of the population hinges to a large extent on provision of an increased supply of manufactured consumer goods at reasonable prices and tolerable quality. Unless an adequate supply of proper good is available to meet the demand resulting from larger incomes generated by increased economic incentives, an inflationary situation of "rubles chasing goods" is bound to occur. Though an improvement in the standard of living took place during the past decade, the overriding priority given to heavy industry and armaments in the allocation of resources has been a serious obstacle to greater consumer progress. This was reflected in a faster rate of growth of heavy industry than of the consumer goods industry, including the food processing industry. The plan for 1965 called for some narrowing of the gap between the 2 segments. In fact, in 1965 consummer goods production increased 8.5 and heavy industry 8.7 percent.

But the plan for 1966 reduced the rate of growth of both heavy industry and the consumer goods industry to 6.9 and 6 percent respectively, thus again widening the gap. The favorable effect of good crops in 1964 on the output of the food processing industry in 1965 and the reverse situation in 1966 doubtless played a part in planning the growth rates of the consumer goods industry. Meanwhile the Soviet press called for continued improvement of the quality of goods and services, for more efficient marketing, and for production oriented more closely to demand. With these ends in view and to increase industrial efficiency, in September 1965 the Kremlin adopted a reform of the administration and planning of industrial production.

The strong emphasis on chemical fertilizer during the last 2 years of the Khrushchev era has been muted. Khrushchev's goal of an output of 70 to 80 million tons of fertilizer (gross weight) by 1970 was reduced to a more realistic goal of 55 million tons, and that for 1965 to 33.5 million tons instead of 35 million. Deliveries, which are usually below output, amounted to over 26.5 million tons in 1965 compared with only 10.6 million in 1958 (table 4). An increase of nearly 3 million tons to 29.5 million tons is specified by the plan for 1966. Despite the current de-emphasis, there has been a significant upward trend in the use of fertilizer since 1962, and no doubt an increasing use of it for grain crops, mainly winter wheat.

The post-Khrushchev regime has also stressed the need for an increasing input of farm machinery. The greatly increased goals for delivery of machinery during 1966-70 compared with 1961-65 are shown in table 5. Despite the impressive planned growth of deliveries, the prospective farm inventories in 1970 are still below what was considered necessary in 1962 and considerably below U.S. farm inventories (table 6).

The problem of organizing efficient repair of farm machinery, alway serious in the USSR, has been much to the fore. Brezhnev pointed out

Table 5.--Soviet Union: Farm machinery deliveries, 1961-65 and 1966-70 planned

Kind of machinery	1961-65	1966-70	1966-70 as of 1961-65
	- Thousands -		Percent
Tractors	1,092	1,790	164
Motor trucks	393	1,100	280
Tractor trailers	520	900	173
Truck trailers	21	275	1,300
Grain combines	387	550	142
Excavators	45.4	80	176
Bulldozers	38.1	55	144
Scrapers	19.2	30	156
Passenger autos	43.4	100	230
	Billion rubles		
Other farm machines	6.4	10.7	168
Spare tractor parts	2.8	4.4	158

Source: P. Kozhevnikov, Ekonomika sel'skogo khozyaystva, No. 6, 1965, p. 29.

at the March 1965 Plenum that the existing facilities permit adequate and timely repair only to the extent of 60 percent of requirements. The repair shops (RTS) which were supposed to continue servicing collective farms after the liquidation of machine-tractor stations in 1958 were also soon liquidated. Some were bought by the more prosperous collectives which could not fully utilize them, while neighboring collectives had to struggle with primitive repair facilities. More than 600 well-equipped shops were transferred to nonfarm enterprises. Some were acquired by a new farm machinery supply organization--Soyuzsel'khoztekhnika, which in 1964 was able to repair only 46 percent of tractors, 26 percent of trucks and 26 percent of grain combines in need of repair. 15/ Considerable reconstruction and re-equipment of existing facilities and construction of new repair facilities of Soyuzsel'khoztekhnika is planned during 1966-70.

Table 6.--Soviet Union: Required machinery inventories and plans for 1970

Kind of machinery	USSR		U.S.
	1970	Requirements	Jan. 1 1964
	- - - Thousands - - -		
Tractors	2,490	2,696	4,657
Grain combines	788	845	1,010
Motor trucks	1,341	1,650	2,915

Sources: P. Kozhevnikov, Ekonomika sel'skogo khozyaystva, No. 6, 1965, p. 29; For performance of farm operations during optimum periods as given by Khrushchev, Pravda, March 6, 1962; G. Stanley Brown, U.S. and Russian Agriculture: A Statistical Comparison, ERS-For.-127, Economic Research Service, U.S. Department of Agriculture, July 1965, p. 2.

Brezhnev stressed at the March 1965 Plenum the slow progress of rural electrification and the need of doing something about it. He said,

> "In recent years giant electric power plants were built in our country. At the same time 12 percent of collective farms do not have electric power even for lighting. Agriculture consumes only 4 percent of the power produced in our country, only 2 percent for production purposes."

Brezhnev also brought up at the March 1965 Plenum the question of lowering the prices of farm implements, spare parts, electricity and other industrial inputs, though indicating that for budgetary reasons this cannot be done before 1966. Raising of prices of such items in the late 1950s led to higher costs and lower collective farm incomes. 16/ Some price reductions took place in the early 1960s. The first important step in implementing Brezhnev's proposal was the announcement late in December 1965 of a drastic slashing of prices of trucks and automobiles sold to collective farms. 17/

Adminstrative and organizational changes were among the first moves of the new leadership after Khrushchev's ouster. They condemned

15/ Kozhevnikov, op. cit., p. 30.
16/ V. Matskevich, Voprosy ekonomiki, No. 6, 1965 p. 5.
17/ Sel'skaya zhizn, 25 December 1965.

splitting local party and government apparatus into agricultural and industrial sectors, stating that it created a great deal of confusion and dissatisfaction within the bureaucracy. Under Khrushchev's system, party officials were involved too closely in the operational and managerial aspects of agriculture and industry. They were diverted from their political duties, and they interferred unnecessarily in what were essentially technical and managerial problems. The post-Khrushchev administration reconstituted the party and government organs on a territorial basis, with the raion (district) agricultural administration as the lowest administrative link.

The next step was to re-establish the Ministry of Agriculture as the central government organ directing Soviet agriculture. In 1960 this heretofore powerful Ministry had been downgraded to an agency administering research and informational activities, its more important functions being taken over by Gosplan (the State Planning Commission) and ministries of production and procurements in various republics. The reconstituted Ministry of Agriculture is a federal-republican agency; that is, it is connected with, and functions through, similar ministries in the various republics of the USSR. It again exercises, with some exceptions, wide control over Soviet agriculture on the national government level. 18/ It is symptomatic that V. V. Matskevich who headed the Ministry of Agriculture during its heyday in 1955-60, was reappointed to this post early in 1965. Two important agencies are outside the Ministry: the Soyuzsel'khoztekhnika, which sells and repairs machinery and other supplies required by farms and the Ministry of Irrigation and Water Resources.

This reorganization implies greater centralization of government control over Soviet agriculture and it remains to be seen what effect this will have on farm management.

The post-Khrushchev leadership, following in the footsteps of its predecessors, proclaimed a more liberal policy towards the private sector--the small plots and especially livestock privately owned by collective farmers and others--which accounts for roughly one-third of total agricultural output. 19/

The extra restrictions placed upon the private sector by the Khrushchev regime since 1956 were lifted. The special taxation of city inhabitants possessing livestock was abandoned. The state even organized the sale of feedstuffs for private livestock in some areas.

The rationale of these measures is twofold: to encourage increased livestock production to overcome the effects of the distress slaughter of 1963/64 and to win popularity for the new regime. Such liberalization had occurred in the past--under Stalin in the mid-1930s' and in 1953 under Khrushchev and Malenkov. But usually the period of relaxation was followed by a tightening of government control. Ideologically, the private sector is considered by Soviet rulers as at best a necessary evil, to be dispensed with when the collective farm economy becomes strong enough to supply the needs of the population. This is obviously not the case with livestock products at present, and the new leadership considers limitations on the private sector premature.

With respect to the socialist sector, Brezhnev reaffirmed the familiar party line regarding the continued coexistence of collective and state farming 20/ and mildly criticized farm giantism. He said at the March 1965 Plenum that,

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18/ On the party level, supervision over agriculture is exercised by the agricultural departments of the Central Committees of the all-Union Party in Moscow and, of the constituent republics, like the Ukraine, Belorussia, etc. and their local party organs.

19/ Narodnoe Khozyaystvo SSSR v 1964 g., p. 252.

20/ Collective farming in theory is modeled on producer cooperatives but is actually under tight state control. The state is not responsible, however, for the wage or investment bill, though it may contribute to the latter. The state farms are owned and managed by the government outright using hired labor as in Soviet factories.

"It must be assumed that these two types of social economy will exist and develop for a long time to come At the present stage our duty consists not in accelerating the transformation of one type into another but in facilitating the development and prosperity of both types....In recent years ... in many regions of the country there was carried out on a wide scale an enlargement of farms. Some collective farms were so enlarged that they became unmanageable The conversion of collective into state farms, was not always economically well grounded, as a result of which many of them are unwieldy, difficult to manage and some of them are at present unprofitable."

These are faults predicted by Western specialists since the merger campaign began 15 years ago during the Stalin regime under Khrushchev's direction. Despite reiteration of coexistence, the number of collective farms decreased from more than 250,000 at the beginning of 1950 to only 37,600 at the beginning of 1965 while the number of state farms increased from less than 5,000 to more than 10,000.

Brezhnev condemned any hasty subdivisional move and there is no indication that it is underway. However, there was considerable public discussion last year of organizational problems of both collective and state farms. It was stimulated, as far as collective farms are concerned, by the discussion of a new model charter of collective farms, to be presented for approval to a long promised congress of collective farmers which will be convened during the current year; according to Brezhnev.

Changes in land use patterns were instituted by Khrushchev's successors while they strongly reaffirmed the flexibility introduced by him in 1964. Khrushchev's policy was supposed to allow discretion in land use at the farm level while the government planned only the required procurement quotas. The new leadership is emphasizing or deemphasizing crops through the price mechanism, procurement quotas and other devices. Khrushchev stressed feed crops, particularly corn, and compelled the growing of corn in practically every region of the country regardless of its lack of suitability to particular climatic and economic conditions, the absence of local know-how, or an inadequate supply of seed and equipment. Sugar beets for feed, field beans and peas later came to share the spotlight with corn, but corn remained for Khrushchev the "green of the fields." Khrushchev also strongly de-emphasized hay crops, shifting a considerable portion of the hay area to corn. Conversely, Khrushchev's successors--mindful no doubt of the disastrous crop failure in 1963--stressed food grains: wheat, rye, buckwheat, rice, and millet. The procurement prices of these grains were increased, as mentioned previously. The replacement of winter wheat by corn in the Ukraine has been strongly criticized. A new emphasis on hay crops, especially on natural meadows, and strong censure of Khrushchev for his attitude towards these crops, was characteristic of government and press pronouncements in 1965. There has been renewed emphasis on the need for summer fallow as a means of moisture and weed control in the dry zone east of the Volga and the Urals, including the New Lands regions. This practice, familiar in Russian agriculture and widely used in the dry-farming regions of the United States and Canada, was frowned upon under Khrushchev, at least until the 1963 crop failure. Its wider use will reduce the acreage under spring wheat and other summer grains, but should improve yields. In view of the large area in spring grain crops, even a small increase in yield results in a substantial increase in output.

Despite the serious droughts in 1963 and 1965 there is no indication of any plan to reduce acreage in the dry zone east of the Volga and the Urals beyond what may be required by the increased use of summer fallow. However, in its quest for increased

production the post-Khrushchev regime is actively sponsoring a program of expansion in the humid western and northern regions--the non-Black-Soil area. It is the consensus of Russian agronomic authorities that, despite its inferior soils, this large area is capable of a substantial increase from the prevailing low crop yields.

The past year witnessed the eclipse of Lysenkoism, which dominated Soviet biological and agricultural science and research under Stalin and wielded considerable influence under Khrushchev.

The most detrimental features of Lysenkoism were not only the theoretical propositions put forward, but also the improper verification of experiments and Lysenko's political power to impose his ideas upon Soviet biology and to hamper other research. When it was expedient, he adapted his theories to fit the preferences of Soviet leaders. For example, he downgraded the benefits of mineral fertilizer when the government was unwilling to increase the supply.

A campaign of severe criticism of Lysenko and Lysenkoism, aiming to restore objectivity and adherence to recognized scientific canons of verification in research, began shortly after Khrushchev's ouster. It is apparently succeeding in the liquidation of the Lysenko cult and in a realignment of Soviet with world biological science. The ouster of M. Ol'shansky, a protege of Lysenko, from his post as President of the All-Union Academy of Agricultural Sciences, the removal of Lysenko from the directorship of the Institute of Genetics in the Academy of Science, and the commemoration of the 100th anniversary of the genetic discoveries of Gregor Mendel--who is anathema to Lysenkoists--are symptomatic of the radical change. Soviet science and agriculture should benefit greatly from these changes.

Foreign trade: The overriding feature of Soviet foreign agricultural trade in 1965 and the previous 2 years was the massive imports of grain and flour. Between mid-1963 and mid-1966 grain imports will total more than 20 million tons, or roughly 7 million tons a year for the 3-year period. Although Soviet grain exports have declined, the drop has not been as dramatic. These are almost entirely to communist countries. In 1962 Soviet exports of grain, flour, and groats exceeded 8.1 million tons in terms of grain, while imports of grain (including rice), flour, and groats were less than 500,000 tons. By 1964 Soviet exports of these same products had fallen to 3.9 million tons while imports reached 8.9 million tons.

For a country which has always been looked upon, and considers itself to be, a major grain exporter, this is indeed a dramatic shift. 21/ Although calendar year imports by the USSR will be lower in 1965 and exports possibly higher, the present purchases from Canada, Argentina, Australia and France for delivery during fiscal year 1965/66, coupled with another serious drop in wheat production in the USSR in 1965, indicate that the net grain trade situation in 1966 will closely resemble that of 1964.

The great shift in the Soviet grain trade pattern dramatizes a general characteristic of Soviet agricultural trade in 1964--a sharp increase in almost all imports of agricultural products and a decline in exports.

With the exception of rubber, cotton, and dried fruit, all other important agricultural imports increased in 1964 (table 7). For most imported commodities, except meat and animals, rice, oilseeds, wool, and vegetable oils, the level of imports in 1964 was above the 1955-59 average. This suggests that, contrary to policy objectives, the Soviet Union has become more dependent on agricultural imports. The value of agricultural imports rose

21/ Soviet grain imports--their causes and consequences--are analyzed in detail in Soviet Grain Imports, ERS-Foreign 135, Economic Research Service, U. S. Department of Agriculture, Washington, D.C., September 1965.

Table 7.--Soviet Union: Principal agricultural imports and exports, average 1955-59, annual 1960-64

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Imports:						
Animals for slaughter	117.5	121.2	152.5	136.9	86.2	79.0
Meat and meat products	166.9	69.9	59.7	149.1	37.4	119.9
Eggs 1/	232.7	113.2	160.5	66.3	76.7	532.0
Wheat	232.9	98.0	655.9	45.1	3052.5	7281.4
Flour, in terms of grain 2/	48.6	29.4	28.1	27.6	346.5	1215.0
Rice, milled	537.0	501.1	19.9	337.5	193.3	363.1
Fruit, fresh	228.9	334.8	316.5	345.6	407.2	439.6
Fruit, dried	47.0	76.7	83.9	77.2	113.4	76.6
Vegetables	115.1	214.9	281.6	291.7	347.9	462.0
Sugar, refined equivalent	510.1	1614.2	3387.4	2339.2	1070.9	1760.4
Coffee, cocoa, and tea	51.0	99.8	65.2	87.4	105.4	129.0
Tobacco	80.1	74.2	57.8	66.6	98.4	129.1
Hides and skins 1/	17.6	23.0	18.5	19.5	26.4	28.9
Oilseeds	708.9	418.5	90.2	57.3	65.2	72.5
Rubber, crude	164.5	190.9	360.3	361.7	298.4	186.1
Cotton, lint	102.5	193.1	141.6	150.2	225.6	144.9
Wool, scoured	53.1	61.5	55.3	48.6	42.4	46.3
Vegetable oils	96.5	59.3	54.4	15.1	37.3	43.2
Exports:						
Meat and meat products	66.6	78.1	66.0	133.7	183.0	60.9
Butter	37.1	37.2	55.6	69.7	65.0	25.3
Wheat	3773.9	5924.4	4800.6	4765.2	4080.8	2030.5
Flour, in terms of grain 2/	91.4	47.1	314.0	314.2	345.5	400.6
Rye	533.8	682.5	1088.0	1300.3	815.0	150.3
Barley	592.9	324.0	1006.8	466.8	594.3	665.8
Oats	171.2	41.5	179.9	25.3	22.0	28.3
Corn	212.2	122.2	405.6	1256.7	723.1	638.6
Sugar, refined	194.4	242.9	3886.3	792.4	802.4	347.7
Oilcake	278.3	496.4	386.1	348.6	193.2	45.5
Tobacco	6.2	1.6	2.9	1.8	1.8	3.2
Oilseeds	61.3	110.4	120.7	112.7	101.2	113.5
Cotton, lint	324.1	390.0	382.6	343.6	321.5	393.6
Wool, scoured	15.1	18.0	28.1	24.2	27.6	24.8
Vegetable oils	52.4	91.8	121.8	152.5	258.9	189.9

1/ Millions. 2/ 80 percent milling rate assumed. 3/ Includes 501,000 metric tons of raw sugar (equivalent to 472,600 metric tons refined) to Mainland China.

Source: Vneshnyaya torgovlya SSSR za 1955-59 g. and subsequent editions.

from 20.5 percent of total imports in 1963 to 25.5 percent in 1964.

The increased imports of meat, eggs, wheat, rice, and flour are explained primarily by shortfalls in production in 1963 and/or 1964. The rise in fruit, vegetable, coffee, and tobacco imports appears to be a continuation of a general upward trend in these items as the general standard of living improves. Imports of sugar are associated with the USSR's commitment to import sugar from Cuba, despite substantial increases in domestic production. Undoubtedly these imports were useful to the USSR in 1963 and 1964, inasmuch as the output of Soviet sugar was low and the large 1964 sugar beet crop had not yet been processed. Sugar imports from Cuba in 1963 and 1964 were, however, far below the quantities the USSR has said it would import from Cuba during the remainder of this decade, and there now seems to be a conflict between scheduled purchases from Cuba and large increases in domestic production.

Both oilseeds and vegetable oil imports are well below those of earlier years, reflecting increased Soviet production. Cotton imports dropped sharply in 1964 reflecting the first (1963) of 3 good Soviet cotton crops.

Among agricultural exports, which dropped from 17 percent of total exports in 1963 to 12 percent in 1964, grain and flour still amounted to almost 4 million tons (table 7). Despite a seriously short grain crop in 1963, the source of most of the 1964 exports, the Soviet Union was still apparently willing to continue exports to other communist countries even when this required substantial imports of grain. The drop in meat and butter production in 1964 is the major explanation for reduced exports of these commodities. The drop in sugar exports reflects the poor 1963 sugar crop. The exceptionally large sugar output in 1964/65 and the good crop of beets in 1965 could alter this situation.

The large drop in oil cake exports reflects low production of oilseeds in 1963, but there is apparently a trend toward reduced oil cake exports. These exports, most of which went to North European countries, have fallen from almost 500,000 tons in 1960 to less than 50,000 tons in 1964, apparently reflecting a policy decision to use the oil cake to augment meager livestock rations. Exports of oilseeds and cotton have remained fairly steady in the past 5 years while exports of vegetable oil, despite a drop in 1964, are still roughly 4 times higher than the 1955-59 average. It remains to be seen whether the very large production of cotton and oilseeds in 1964 and 1965 will show up in increased exports, greater internal use, or a combination of both.

Most of the Soviet Union's trade is with other communist countries--about 70 percent. The major Soviet trading partners in terms of total trade turnover are: East Germany, 18 percent, Czechoslovakia 12 percent; Poland, 9 percent; and Bulgaria, 7 percent. Of the Western countries which have substantial trade with the Soviet Union--accounting for at least 2 percent of total trade turnover--England, West Germany, Finland, Japan, and India are the most important.

Agricultural trade between the United States and the Soviet Union has been small. The value of U.S. exports to the USSR has exceeded by a wide margin the value of U.S. imports (table 8). In 1964 the exceptional U.S. wheat exports made this difference even greater when total U.S. exports reached $127.6 million while imports from the USSR totaled only $1.78 million.

The commodity composition of this trade is quite different from year to year but customary U.S. exports to the USSR are tallow and cattle hides, while the items most often imported are licorice root, essential oils, and bristles.

Table 8.--Soviet Union: Imports from and exports to the United States, by value and quantity, annual 1961-64

Commodity	Unit	Value				Quantity			
		1961	1962	1963	1964	1961	1962	1963	1964
		1,000 dollars				Thousands			
Imports from U.S.:									
Horses, mules, asses and burros	Number		130	25			2		
Cattle hides	Do.		1,903	3,552	1,231		197	576	199
Tallow, inedible	Pounds	15,122	4,011	2,066	8,250	197,437	66,187	33,400	121,690
Tobacco, unmanufactured	Do.		44				45		
Seed beans, all types	Do.			783				9,839	
Cotton, excluding linters 1/	R.Bales				311				2
Rice, milled	Pounds				7,386				120,392
Wheat 2/	Bushels				110,418				61,940
Other		58	40	279	18				
Total		15,180	6,128	5,705	127,614				
Exports to U.S.:									
Licorice root	Pounds	287	395	613	385	6,432	8,747	12,638	8,114
Oils, essential		81	106	110	87				
Casein or lactarene	Pounds	57				441			
Bristles, crude and prepared	Do.	307	159	194	168	67	44	40	25
Linters	Do.	541		495	747	13,299		8,718	12,279
Cotton, unmanufactured	Do.		626				12,908		
Vegetables and preparations			46	54	29				
Sausage casings				110	166				
Wool, unmanufactured, dutiable	Pounds				98				65
Other		33	73	89	101				
Total		1,306	1,405	1,665	1,781				

1/ Running bales. 2/ 60 pound bushels.

Sources: U.S. Foreign Agricultural Trade by Countries, Calendar Year 1964, and earlier editions. Supplement to the monthly Foreign Agricultural Trade of the United States, Economic Research Service, U.S. Department of Agriculture.

EASTERN EUROPE

POLAND

Production: Agricultural production in Poland during 1965 reached a new high, 3 percent above 1964 and slightly above 1961, the previous high (table 1). Good harvests of grains and oilseeds were recorded. Livestock output was up sharply. Declines took place in potatoes, sugar beets, fruits, and vegetables. The output of most other crops was about the same or somewhat below 1964.

Total grain production in 1965 approached 16 million tons, about 2 million tons higher than 1964 and well above the 1957-59 average (table 9). Although weather conditions were cool and rainy during the spring and most of the summer, resulting in a 2 to 3-week delay in the harvest, overall conditions were favorable with relatively good harvest weather. Winter crops did exceptionally well, but excess moisture may have lowered the quality of the grain crop. Increases in grain production were due primarily to yield increases. Wheat production showed the most significant increase, with production in 1965 almost a million tons higher than the 1957-59 average. The 1965 production of all other grains was about 6 percent above the 1957-59 average.

Rapeseed production was up to 480,000 tons, compared to only 100,000 tons in 1957-59. A large expansion in area in recent years and very moderate 1964/65 winter kill explain the increase. Root crops in 1965 were adversely affected by weather which delayed planting and retarded growth. Potato output was down about 10 percent compared to 1964, but well above the 1957-59 average. Sugar beet production was at about the 1964 level. A substantial increase in area offset the lower 1965 yields. Output is well above the 7.3 million ton average of 1957-59.

Fruit production was down significantly from the 1964 crop although a very good strawberry crop was reported. Vegetable output was below the 1964 level, but with good harvests of cabbage, carrots and cauliflower. Onions, tomatoes and cucumbers were below 1964 levels. Hay production was higher than in 1964. Pastures and other roughages were also better than a year earlier.

Hog numbers were at a record high in June 1965 and cattle numbers were up slightly. Cow numbers were down again, but sheep numbers turned upward for the first time in 10 years. Meat production was up 8.5 percent due almost entirely to increased hog slaughter. Beef output was down slightly. Milk production was well above the 1964 level and egg production increased also. Wool output is estimated to have increased slightly. On the whole, livestock output stands at a substantially higher level than the 1957-59 average.

Inputs: Tractors in Polish agriculture increased from 28,400 in 1950 to 48,300 in 1955; by 1960 there were 62,000. Since then there has been an increase of about 10,000 annually and the total at the end of 1964 was 106,800 (table 25). In the late fifties private farms acquired some tractors; by 1960 these totaled 12,500. Since 1960, however, private holdings of tractors have increased only slightly. Most of the additional tractor supply has gone into Agricultural Circles, which serve private farms, while those in state tractor stations have declined. At the end of 1964, Circles held 35,700 tractors; collectives, 3,400, state farms, 46,400, and state tractor stations, 8,800. This would suggest that less than half the farm tractors serve the private sector, which accounts for 86 percent of all agricultural land.

The application of fertilizer in terms of plant nutrients per hectare of sown area has about doubled in the past decade, reaching 64 kilograms per hectare in 1963/64 compared to 35.3 in 1954/55 (table 25). On collective and private farms the average rate of application

Table 9.--Poland: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	2,375	2,700	3,067	3,072	3,360	1,450	1,393	1,542	1,640	1,680
Rye	7,626	6,685	7,124	6,982	8,100	5,160	4,700	4,383	4,417	4,500
Barley	1,160	1,315	1,479	1,268	1,365	721	663	748	745	700
Oats	2,565	2,740	2,830	2,238	2,520	1,711	1,584	1,682	1,574	1,400
Other grains 2/	518	485	561	511	540	400	346	380	355	360
Potatoes	35,201	37,817	44,868	48,130	43,400	2,769	2,910	2,840	2,845	2,820
Sugar beets	7,341	9,652	10,661	12,574	12,500	358	430	372	444	475
Rapeseed	104	361	227	268	480	98	250	193	237	320
Tobacco	44	37	73	95	90	30	31	34	49	48
Livestock products:										
Meat 3/	1,537	1,704	1,585	1,583	1,718					
Poultry 4/	52	75	73	82	83					
Other meat 5/	27	39	34	38	40					
Milk, cows	11,744	12,871	12,651	12,602	13,000					
Wool	9	8	7	7	8					
	Million units									
Eggs	4,671	6,092	5,751	6,000	6,200					
Livestock: 6/	1,000 head									
Cattle	8,276	9,590	9,841	9,940	9,947					
Hogs	11,831	13,617	11,653	12,918	13,779					
Sheep	3,900	3,251	3,056	3,022	3,061					
Horses	2,732	2,657	2,620	2,593	2,554					

1/ USDA preliminary estimates except for livestock numbers. 2/ Includes mixed grains, buckwheat, millet and corn for grain. 3/ Beef, veal, pork, mutton, slaughter weight. 4/ Dressed weight. 5/ Horse and other animals, slaughter weight excluding offals. 6/ June census.

Sources: Rocznik Statystyczny, 1965 and Biuletyn Statystyczny, No. 11, 1965.

is 56.1 kilograms per hectare, on state farms, 120.4 kilograms per hectare. Undoubtedly the rate of application on collective farms is much higher, and that on private farms much lower, than these figures indicate. Domestic production supplies about half the fertilizer used. Plans for the remainder of the decade call for further substantial increases in fertilizer production and utilization.

Policy: The new Five-Year Plan (1966-70) for Poland's agriculture was announced in 1965 and dominates the present policy scene. Like the new programs in other East European countries, it reflects a more sober appraisal of agricultural possibilities and the intention to allocate more resources to agriculture than in previous years.

The plan calls for a 14 to 15 percent increase in agricultural production from 1966 to 1970 compared to the 22 percent called for, but not achieved, in the previous Five-Year Plan. In contrast to previous plans, crops will be emphasized relative to livestock, the former to increase by 17 percent and the latter only 11 percent.

The most ambitious goal of the new plan is to raise production of the 4 major grains--wheat, rye, barley and oats--to 18.4 million tons by 1970, some 4 to 5 million tons above the level of recent years. The increased output is to come from raising yields and from shifts within the grain area. The wheat area will increase 30 percent and barley area 20 percent at the expense of rye and oats.

Cattle numbers are to increase to 12 million head and hog numbers to 14 million head, in order to achieve a 21 percent increase in live weight meat production. Increased milk production is planned primarily through more efficient feeding. Sheep numbers are to remain about at present levels while horse numbers are projected to decline by 300,000 head.

Investment in agriculture is to rise sharply and account for 18.2 percent of total financial outlays as compared with only 14 percent during the previous plan. About 35 percent of the investment outlays are to come from the resources of private farmers, financed in part by state credits. One quarter of the investment in agriculture will go to the favored state farms, which have only 13 percent of the country's land. Mineral fertilizer use is planned to more than double by 1970. Plans are for much of this fertilizer to be available toward the end of the decade after fertilizer plants have been constructed. Tractor production is to more than double with annual output reaching 40,000 by 1970. Most of these tractors will be allocated, as now, to Agricultural Circles and state farms.

The plan calls for no significant changes in the present system of land ownership with private farms holding about 86 percent, state farms and Agricultural Circles, 13 percent, and collective farms, only 1 percent of the agricultural land. Thus private agriculture, at least as envisaged in the plan, is to remain the dominant feature of Polish agriculture. There is some evidence that the larger of these private farms will play a more important role. Loans are now available from the government to private individuals for land purchases to expand their farms as long as the land is adjacent to the purchaser's farm and he can put up 30 percent of the price. The loans are repayable at 2 and 3 percent interest and over periods of 20 and 30 years.

The plan also calls for more contract marketing. At present, crop production from about 16 percent of the total sown area is purchased by contract, but by 1970 contracts are scheduled to cover 30 percent. Compulsory marketings of grains, potatoes, and livestock at current levels will continue through 1970. Through a variety of channels, including the free market, the government plans to purchase the following percentages of total output by 1970:

	Percent
Slaughter livestock	78.3
Milk	36.3
Eggs	44.6
Grains	41.7
Potatoes	12.2
Sugar beets	100.0
Oilseeds	92.8
Tobacco	100.0

Table 10.--Poland: Principal agricultural imports and exports, average 1955-59, annual 1960-64

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Imports:						
Meat and meat products	17.9	18.1	9.8	5.0	47.6	37.7
Wheat	1,035	1,700	1,700	1,504	1,673	2,211
Rice, milled	44	100	60	51	99	55
Coarse grains	347.9	386.1	680.7	669.8	940.4	473.1
Fruits and vegetables	1/ 14.0	39.0	62.0	145.0	116.0	84.0
Fruits, citrus	28.2	32.3	36.3	35.0	33.7	38.9
Tea and coffee 2/	1/6,113	7,095	6,478	11,257	13,836	13,836
Cocoa beans	6.7	10.8	9.7	11.5	12.2	14.0
Tobacco	14.0	11.8	11.6	15.1	19.3	15.8
Cotton	102	127	140	121	123	152
Vegetable oils and animal fats	56.4	80.8	91.6	102.1	82.4	178.3
Oilseeds	8.2	23.7	25.0	17.6	15.6	20.6
Wool	18.7	18.8	17.6	18.5	14.9	15.7
Exports:						
Pigs for slaughter 3/	19.9	29.4	64.5	45.6	8.6	9.1
Meat and meat products 4/	75.4	92.8	152.7	154.2	125.3	126.2
Canned hams	13.6	17.2	17.3	16.8	17.7	19.8
Butter	10.3	28.6	26.7	27.5	18.6	20.0
Eggs 5/	522.0	1123.0	1636.0	1219.0	783.0	638.0
Coarse grains 6/	57.2	100.0	124.9	52.1	105.0	104.9
Sugar, raw and refined	207	316	661	734	213	504
Lard	6.0	3.5	8.2	23.2	4.3	0.4

1/ Less than 5 years. 2/ Metric tons. 3/ Slaughter weight. 4/ Excluding canned hams. 5/ Millions, fresh equivalent. 6/ Includes malt in terms of barley.

Source: Rocznik Statystyczny, 1965.

The most important goal of the planned increase in grain production is the elimination of grain imports by 1970. These imports have amounted to about 3 million tons in recent years, much of which comes from the United States. Grain imports dropped in 1964, however, and will probably be close to 2 million tons in 1965. Agricultural exports will remain important earners of foreign exchange, but their relative significance is planned to decline as a consequence of increased exports of nonagricultural products and abandonment of less profitable agricultural exports.

On the basis of past performance there is reason to doubt that the objectives of the plan will be fulfilled. But the greater quantities of inputs planned, and the relatively modest increases in production called for, favor the possibility of greater success than under past

plans. An indication of the seriousness of the government's intentions was the sharp increase in the prices it paid for grain last fall. The increases ranged from 250 zlotys per ton for compulsory deliveries of wheat to 700 zlotys per ton of rye, oats, and mixed grains purchased on the free market; increases of more than 10 and 23 percent respectively. Furthermore, farmers who contract to sell grain to the government will receive priority treatment in the allocation of fertilizer, quality seeds, chemicals, machinery service, and mixed feeds.

Food situation: The food situation in Poland is, in general, good. Inasmuch as a large segment of the population is closely connected with agriculture and private farms predominate, much of the population is close to the supply of food. From 1960 to 1964, wages of employees in the urban sector increased 17 percent while the cost of living rose only 8.5 percent. Although probably not an accurate reflection of the situation in the country as a whole, this nevertheless indicates an increase in real incomes which is reflected in the consumption pattern.

After reaching a low in 1958, per capita consumption of grain products rose again until 1962. It fell to a new low in 1964. Per capita consumption of potatoes has been declining steadily. Per capita consumption of meat and meat products has increased about 10 kilograms in the past decade. The per capita consumption of sugar and eggs has been rising gradually while dairy products have remained fairly constant.

Retail food prices are about 11 to 12 percent above the level of 1958; there was a significant decline in the prices of vegetables, potatoes, and fruits (down to about 90 percent of the 1958 level), and a large increase in the prices of meat and dairy products (about 46 percent above the 1958 level).

Although domestic meat supplies increased 12 percent in 1965, the government acknowledged that the demand for meat was not satisfied. Consequently, it is planned to increase these supplies in 1966 even though this will mean a reduction of about 75,000 tons in meat exports. The vegetable and fruit situation was not as good in 1965 as in 1964, but still better than the situation which prevailed during earlier years.

Foreign trade: Agriculture exports which increased in 1964 were fruits, hides, livestock and meat, potatoes, sugar, tobacco, and vegetables. Smaller quantities of fats and oils, feeds, fibers, fresh frozen meats, and poultry products were exported (table 10). Among the imports, 1964 showed increases over 1963 in coffee, dairy products, fats, feeds, fibers, hides, livestock, oils, oilseeds, and potatoes. Imports of grains and grain products, fruits, fresh frozen meats, sugar, and vegetables decreased.

In the first half of 1965, by comparison with the first half of 1964, major export increases took place in meats, including bacon, canned hams, dressed poultry, and preserved meat. Exports of frozen meat increased dramatically; in the first half of 1965 more than 40,000 tons of frozen meat were exported compared with only 9,000 tons in the first half of 1964.

On the import side no significant changes took place during the first half of 1965 compared to the first half of 1964, except for a substantial drop in wheat imports.

The good grain crop and high livestock output in 1965 should result in a further reduction in grain imports and, despite government statements that the domestic meat supply is to be increased at the expense of exports, substantial meat exports are expected.

Cotton imports by Poland have increased substantially in the past 3 years, from 120,600 tons in 1962 to 151,900 tons in 1964. The Soviet Union is the largest cotton supplier, with the United States second and the United Arab Republic third. During the first 7 months of 1965, cotton imports totaled 80,000 tons compared to 86,000 tons in the same period of 1964.

The Polish government signed a new trade agreement with the Soviet Union in 1965 which assures that the predominance of the Soviet Union in Poland's trade will be maintained; the USSR now accounts for about one-third of total Polish trade turnover, another third is accounted for by other communist countries. A substantial increase in Polish-USSR trade is called for in the agreement. Among agricultural commodities the agreement calls for Soviet exports of over 400,000 tons of cotton to Poland between 1966 and 1970.

Poland is, with the exception of 1964 when the USSR imported exceptionally large amounts of wheat, the largest U.S. agricultural market in Eastern Europe. United States agricultural trade with Poland during calendar year 1964 included over $127 million of exports and almost $31 million of imports. Major U.S. exports to Poland include wheat, cotton, tallow, soybean oil, grain sorghums, butter, soybeans, cottonseed oil, corn and barley. Major U.S. imports from Poland include canned cooked hams and shoulders, other pork products, hides and skins, and fruits.

EAST GERMANY

Production: Consistent with the pattern of recent years, agricultural production in East Germany crept upward in 1965 (table 1). The USDA index of agricultural production indicates that 1965's output was 3 percent above the 1957-59 average. Crop production was down in 1965, but livestock production was up sufficiently to raise total output. Production of most grains was down, as was the output of potatoes and sugar beets. Rapeseed output was up. All of these changes were relatively slight, however (table 11).

The winter was mild and relatively moist, but the absence of normal freezing and thawing left the soil more compact than optimal for spring field work. Spring planting, moreover, was delayed by rains. On the whole, weather conditions during the spring and early summer were quite good, but heavy rains delayed fall harvesting and increased the probability of spoilage and storage losses. Total grain production in 1965 was down slightly more than 4 percent compared with 1964 and about 2 percent below the 1957-59 average. The decline in grain production was not large for wheat, but rye and barley output was down about 10 percent. Mixed grains, primarily feed grains, were also lower.

Potato output was down slightly because of a drop in yields, but there are indications that the quality of the crop was low and that larger than usual storage losses could develop. Sugar beet production was lower in 1965 primarily because of a decline in yields but smaller acreage was also an important factor. Both sugar beets and potatoes were reportedly harvested under adverse conditions.

One of the difficulties caused by weather conditions in 1965 was that many crops had to be planted--and harvested--at the same times. In spring the best time for sowing grain coincided with the planting of sugar beets. In the fall, heavy rains compressed harvesting into short periods when many different crops had to be harvested at the same time. These conditions placed an unusually heavy burden on machinery and labor, both of which are in short supply.

Livestock output increased again in 1965, continuing the steady increase since 1962. Meat and egg production reached record highs. Milk production was almost as high as the record 1960 output and wool production was back up to the level of 1957-59. With the exception of horses, livestock numbers were up.

Trends in production: It has been indicated in previous situation reports that the pattern of agricultural output in East Germany is remarkably constant. With only 2 exceptions, the USDA index shows that agricultural production ranged from 93 to 103 percent of the 1957-59 average during all the years between 1953 and 1965. The exceptions were 1960 and 1961. In 1960 production was 12 percent above the 1957-59 average and in 1961 only 85 per-

Table 11.--East Germany: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	1,331	1,315	1,280	1,348	1,300	432	423	426	433	430
Rye	2,244	1,726	1,675	1,890	1,700	1,074	811	820	823	820
Barley	956	1,164	1,197	1,496	1,380	337	374	424	464	460
Oats	1,037	1,054	807	775	754	431	372	315	295	290
Mixed grains 2/	464	678	577	676	600	210	265	253	272	275
Potatoes	12,821	13,284	12,886	12,872	12,665	783	742	747	745	745
Sugar beets	6,033	4,970	6,176	6,003	5,824	225	232	232	230	224
Rape seed	165	165	128	176	180	133	105	107	118	120
Tobacco	6	5	7	8	5	4	5	5	5	5
Livestock products:										
Meat 3/	1,154	1,087	1,198	1,343	1,360					
Poultry 3/	56	81	89	90	95					
Other meat 3/	64	58	59	62	62					
Milk, cows	5,590	5,216	5,569	5,751	6,000					
Wool	8.0	7.1	7.5	7.8	8.0					
	Million units									
Eggs	2,965	3,100	3,250	3,696	3,818					
Livestock: 4/	1,000 head									
Cattle	4,130	4,548	4,508	4,614	4,682					
Hogs	8,014	8,864	8,045	7,288	8,759					
Sheep	2,082	1,930	1,792	1,899	1,972					
Horses	597	403	369	341	306					

1/ USDA preliminary estimates except for livestock numbers. 2/ Primarily feed grains, including buckwheat and small amounts of corn. 3/ Liveweight. 4/ Number at end of previous year.

Source: Statistisches Jahrbuch der Deutschen Demokratischen Republik, 1965 and earlier editions.

cent of the average. Although part of the substantial drop in output in 1961 can be attributed to the weather, a more significant factor was the political decision to complete the process of collectivization. Until 1960 only about half of East German agriculture was collectivized, but in that year the government pushed through collectivization of the remaining half. Although output in 1960 was raised somewhat by anticipatory slaughter of livestock, total agricultural production dropped in 1961. After 1961, however, production gradually improved and in 1965 was slightly above the 1957-59 level. Total grain production is not appreciably different now from what it was in 1953, nor for that matter is the output of most other crops, such as sugar beets, potatoes and oilseeds. On the other hand, the output of livestock products has increased significantly since 1953. Meat production is now about 30 percent above the level of the early 1950 s and milk production is 40 percent higher. Egg production has about doubled. This increase in livestock output was facilitated by converting much land formerly under grain to nongrain feed crops, while grain output has been maintained by the increased application of fertilizer, and more machinery and other inputs.

Policy and agricultural inputs: The pattern of production discussed above indicates that East Germany has made a substantial shift from the primarily grain economy of prewar years to a grain-livestock economy. This shift has made it possible for East Germany to provide a wider variety of its own food needs, but has not eliminated the need for large imports of agricultural products, which amount to somewhat more than a quarter of total imports. Because of a decline in total population, the relative constancy of agricultural production has had less of an impact on East Germany than would have been the case had population been increasing. East Germany's population has declined steadlily from over 19 million in 1948 to a level of 17 million in 1964. As a consequence, the constancy of production has been accompanied by a gradual increase in the per capita level of output.

This situation is, however, far from satisfactory in the view of East German leaders. The relatively poor performance of agriculture since 1960 as well as the simultaneous downturn in the economy as a whole has resulted in new programs for agriculture. As in most of the other East European countries which have initiated similar programs, the main goal of the program is to raise output through more efficient management and operation of the existing resources, to abandon obviously impossible goals for agriculture, to increase prices for agricultural products, and to expand the supply of fertilizer and machinery.

In 1964 the long-standing dual-price policy--a low price for required procurements and a higher price for smaller government purchases above this level--was abandoned and replaced by a uniform price for all goverment purchases. For most crops the new price was well above the average of the two, thus substantially raising farm receipts from sales to the government.

The present uniform price system encompasses all the grains, oilseeds, sugar beets, and potatoes. For livestock products the dual price system has been retained. However, government purchases of livestock products are much more heavily weighted in the higher price category than are purchases of crops. Moreover, since 1960 there has been a noticeable increase in purchases at the higher price and a decrease in purchases at the lower price. After 1960, the existing price program for livestock products actually helped to raise total farm income.

Mineral fertilizer and lime application rates were high in East Germany even during prewar years. From 1953/54 to 1963/64 the supply of mineral fertilizer, in terms of plant nutrients, increased from 760,000 to 1.1 million tons. The use of lime increased from 584,000 to 1.2 million tons. Fertilizer application, which amounted to 230 kilograms per hectare of arable land in 1963/64 is much higher in East Germany than in any other East European country (table 25). A further substantial increase

in fertilizer deliveries has taken place in the past year or two in conjunction with the policy of increasing these inputs.

Tractors in East German agriculture reached 117,700 by the end of 1964 compared to only 70,600 in 1960 and about 11,000 in 1950. By the end of 1964, state farms held 9,200 and collective farms 101,200 of the available tractors. The major change in tractor ownership in East Germany has been the disbanding of the machine-tractor stations which formerly held most of the tractors and the sale of these tractors and machinery to collective farms. In view of the heavy shortage of labor in East German agricultrue and the still insufficient supply of machinery, the rate of increase in tractor numbers and other machinery is relatively slow. In fact, the net addition of 6,500 to tractor numbers during 1964 was the smallest in recent years. This shortage of machinery, in the face of a labor shrotage, was a major handicap during 1965. The customary employment of students, soldiers, and factory workers did not adequately compensate for this situation.

Since 1960 the structure of land ownership has remained relatively constant. Of the total agriculturally utilizable land--a standard East German point of reference including arable land, orchards, vineyards and other farmed areas--of 6.4 million hectares, about 410,000 belong to state farms, 5.45 million to collective farms, and some 400,000 to other farms. In other words, about 93.7 percent of the land is socialized. The lower type of collectivized farms, Types I and II, have declined in number and in their share of the total land since 1960. The higher type of collective farms, Type III, dropped slightly in numbers but increased their land holdings. Private garden plots within the collective farm sector account for about 655,000 hectares.

There has been a definite slowing of the pace of pushing the less collectivized farms into more tightly controlled farms and of consolidating smaller collectives. This reduced pressure reflects the present policy of the government to improve the performance of the existing farm structure through more inputs, higher prices, and better managment. It also reflects the difficulties faced by the government in pushing higher levels of collectivization where privately owned livestock must be surrendered to the collective. Experience suggests that such a move can be undertaken only at the risk of reducing livestock output.

Food situation: As would be expected the relatively stable production and the declining population, augmented by heavy imports, results in a fairly constant food situation in East Germany. Prices are fixed at the retail level and fluctuate very little. Inadequacies in the supply of various products are controlled through rationing of one form or another. The quality of the diet has improved, however, in the past 10 years. Per capita consumption of meat has increased 13 kilograms, with the largest increase in beef and veal. Since 1962 the supply of beef and veal has increased only minimally and per capita consumption has declined somewhat. This has been offset, however, by an increase in pork consumption. Per capita consumption of eggs and egg products has almost doubled since 1955. Per capita milk consumption rose from 1955 to 1959, fell until 1962 and increased again thereafter, following the trend in production. Consumption of fats and oils has increased, while per capita consumption of grain products and potatoes fell 20 kilograms each between 1954 and 1964.

Foreign trade: East Germany's place in the world agricultural market is influenced by its relatively large urban population, relatively high food consumption and limited agricultural base. With the exception of sugar, exports of agricultural products are small, limited to shipments to West Berlin and West Germany.

Imports of agricultural products are quite large, amounting usually to more than 25 percent of total imports. Relative to domestic

Table 12.--East Germany: Principal agricultural imports, average 1955-59, annual 1960-64

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Meat and meat products	111.0	104.0	107.5	202.2	139.1	106.1
Butter	34.6	44.4	51.2	55.7	48.8	31.2
Cheese	12.6	20.2	21.2	18.2	16.8	16.5
Eggs and egg products 1/	179.9	57.0	20.8	55.3	164.8	113.3
Wheat	973.2	1520.0	1250.0	1238.0	1023.0	1303.0
Rice	73.7	142.8	30.3	30.4	30.3	26.8
Coarse grains	77.6	559.0	674.0	1001.0	658.0	629.0
Fruit, fresh and tropical	161.5	185.4	212.5	211.1	235.5	273.2
Fruit, canned and juices	14.0	41.9	39.6	31.2	32.0	52.5
Potatoes	33.7	54.7	90.4	129.1	128.2	409.8
Vegetables, fresh	67.3	115.6	102.9	94.6	130.5	148.8
Vegetables, canned	19.4	28.6	27.9	24.6	33.2	92.2
Coffee, cocoa, and tea	23.0	36.9	42.1	44.7	49.9	52.4
Wine and champagne 2/	305.3	531.1	519.2	647.1	705.9	642.5
Spirits 2/	3.8	7.7	8.9	18.0	6.9	10.0
Beer	134.6	88.8	78.3	77.9	78.3	78.6
Tobacco, smoking and cured	26.2	25.5	22.4	24.2	29.2	27.2
Hides and skins 3/	15.7	20.0	22.1	24.3	20.1	21.0
Oilseeds	287.3	282.5	126.6	108.2	137.3	154.6
Cotton	93.2	107.7	95.5	123.5	93.5	96.2
Wool, scoured	11.4	19.4	23.0	21.2	23.3	22.3
Animal fats, refined and unrefined	13.8	5.9	2.5	10.4	3.2	2.2
Vegetable oils, raw and refined	77.8	109.7	121.5	148.8	136.3	119.1
Edible legumes	14.4	13.5	7.2	7.2	8.3	22.8

1/ Millions, fresh equivalent. 2/ 1,000 hectoliters (1 hectoliter = 26.418 U.S. gallons). 3/ Salt weight.

Source: Statistisches Jahrbuch der Deutschen Demokratischen Republik, 1965 and earlier editions.

production, East Germany imports about one-eighth as much meat, one-fourth as much butter, as much wheat, and depending upon a given year's harvest, from one-fourth to one-third as much fruits and vegetables. Large quantities of vegetable oilseeds and oils, cotton, and tropical products are also imported (table 12). A major policy objective for years has been to reduce these imports, a goal which is being realized partially for butter, eggs, and meat. On the whole, however, present imports do not differ substantially from the 1957-59 level, and imports of wheat, feed grains, and potatoes remain large. A decline in oilseed imports

has been partly offset by increased vegetable oil imports. Imports of fruits, vegetables, and tropical products increase annually, while imports of cotton and tobacco remain fairly constant. No significant change in this situation seems likely in the near future. The Soviet Union is the major supplier of agricultural products to East Germany, with other communist countries accounting for a large share of the remainder. In recent years when the USSR has experienced difficulties with grain supplies, East Germany has purchased grain from other countries including the United States, but the USSR, despite grain problems, continues to supply the major portion of East German grain imports.

United States agricultural exports to East Germany in 1964 totaled $16 million while imports totaled only $830,000. Wheat, butter, corn, soybeans, and tobacco were the most important U.S. exports.

CZECHOSLOVAKIA

Production: Agricultural production dropped sharply in Czechoslovakia in 1965 (table 1). Due in large part to a combination of highly unfavorable weather conditions, crop production fell about 9 percent while livestock product output increased about 4 percent.

During the spring, floods destroyed large areas of crops in western Slovakia and southern Bohemia. Throughout much of the summer and fall, heavy rains and low temperatures plagued crops, delaying the harvest 3 to 5 weeks, causing extensive lodging, and resulting in a high moisture content in the harvested grain.

With the exception of feed crops, the output of most crops was below 1964 and even below long-run averages (table 13). Grain yields were approximately the same as 1964 on the area that was finally harvested, but this area was down from 1964. Grain yields in both 1964 and 1965 were substantially below long-run averages. The output of all grains was down compared with 1964, primarily because of reduced area. Wheat output was still better than any previous year except 1964 because, although down, the wheat area was still above the level of previous years. Rye production was down considerably from the 1964 level and compared to average output in recent years. Barley production was lower than any year since 1958 and about at the 1957-59 average. Oat and corn production was down because of reduced area.

With the exception of rapeseed the output of other crops was down sharply. Potato production can be accurately described as a failure, dropping from 7.6 million tons in 1964 to 4.5 million tons in 1965. This is the lowest potato output in recent Czech history. Sugar beet production fell approximately 1.5 million tons and was the lowest since 1959. Large declines also took place in fruit production and vegetable output.

The seriousness of these declines from the 1964 level becomes more evident when it is realized that 1964 yields were, on the whole, lower than any since 1959 making 1965 the second, and for most grains, the third, poor year in a row.

Although the output of livestock products rose in 1965, this is not a particularly hopeful sign for Czech agriculture. Some of this was due to poor crop output in 1965 inducing heavier slaughter than usual; the feed situation will continue to be poor during the winter and spring of 1965/66.

Livestock numbers at the beginning of 1965 were roughly the same as a year earlier. A slight decline in herds is anticipated when the January 1, 1966, census is made public.

Inputs: Mineral fertilizer use in Czech agriculture increased from 28.2 kilograms per hectare of agricultural land in 1950/51 to 94 kilograms per hectare in 1963/64. Total fertilizer consumption in terms of plant nutrients has more than tripled, but the trend upward has not been constant. It rose fairly steadily

Table 13.--Czechoslovakia: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	1,507	1,644	1,766	1,829	1,800	733	673	719	831	820
Rye	951	916	880	870	838	498	441	426	406	409
Barley	1,343	1,752	1,620	1,429	1,376	670	694	692	686	660
Oats 2/	900	905	797	669	656	517	448	409	394	370
Corn	476	471	578	465	346	179	237	213	186	160
Potatoes	7,226	5,002	6,506	7,656	4,500	607	508	503	491	420
Sugar beets	6,222	5,811	8,018	7,474	5,724	234	260	259	259	212
Rapeseed	53	48	41	46	62	35	34	38	48	44
Tobacco	8	6	8	9	8	7	5	6	6	6
Livestock products:										
Meat 3/	903.0	997.8	992.0	1,063.3	1,087.0					
Poultry 4/	35.0	48.0	40.0	38.0	40.0					
Milk, cows	3,759.0	3,664.0	3,535.0	3,650.0	3,801.0					
	Million units									
Eggs	2,087	2,375	2,515	2,695	2,800					
Livestock: 5/	1,000 head									
Cattle	4,136	4,518	4,507	4,480	4,443					
Hogs	5,362	5,895	5,897	5,845	5,913					
Sheep	887	603	524	527	530					
Horses	505	292	254	227	197					

1/ USDA preliminary estimates except for livestock numbers. 2/ Oat and barley mixture. 3/ Liveweight. 4/ Dressed weight. 5/ Number as of Jan. 1.

Source: Statisticka Rocenka CSSR, 1965.

to 1958/59, declined in the next 2 years and has increased fairly rapidly since 1961/62. During 1963/64, fertilizer consumption per sown hectare reached 132 kilograms, second to East Germany among East European countries (table 25).

Deliveries of tractors have fluctuated between 12,000 and 16,000 a year since 1959. Deliveries dropped sharply in 1961 and 1963. In 1964 slightly more than 16,000 were delivered and about the same number is estimated to have been delivered in 1965. In 1964 the number of tractors (in terms of 15 horsepower units) stood at 164,500 compared to 94,300 in 1960 and 40,800 in 1955 (table 25).

Land use in Czechoslovakia remains fairly stable, but a constant outflow of labor from agriculture has caused significant labor shortages which mechanization has not overcome. Adverse weather made the problem of undermechanization especially serious in 1965.

Policy: Changes in agricultural policy in Czechoslovakia during 1965 reflect both the harvest difficulties and the longer-run changes in policy associated with the new 5-year plan for 1966-70. They also reflect changes in the general economic structure of the country during 1964 and 1965.

Because of the problem of excess moisture during 1965 and the generally low quality of the grain crop, the standards for grain delivered to the government were lowered, especially for wheat and spring barley. During the early part of September the government paid a premium of 30 crowns per 100 kilograms of table potatoes delivered to state purchasing enterprises.

In part to alleviate labor shortages during 1965 and to forestall future shortages, persons receiving old-age, widow's or orphan's pensions may continue to receive full pensions even if they work more than 120 shifts per year, provided they temporarily help with the cultivation of sugar beets, haymaking, and harvesting of grain and root crops.

A series of changes in agricultural procurement prices was initiated in 1964 and continued during 1965. In 1964 procurement prices were increased for cattle, wool, milk, corn, beans, and some other crops. Those for pigs, poultry, and peas were lowered. Bonus prices were introduced to encourage greater off-farm sales of milk, grain, and sugar beets. During 1965 new government purchase prices were announced for most grains, with especially high prices for hard wheat and malting barley. These prices are to become effective with the 1966 harvest. Farms which increase the area sown to grains above the 1964 level and deliver to the government from 40 to 60 percent of their grain output will be paid an additional one-time subsidy of 500 crowns per hectare of the added planted area.

Prices were also raised on mixed feeds. It is anticipated by the Czech government that this measure will discourage the use of grain for hogs and raise grain output, thus reducing grain imports. Another step to conserve feed during the fall and winter of 1965/66 and maintain the flow of meat from farms was taken by the government when it announced that overfulfillment of the 1965 meat delivery plan would be credited to the 1966 plan. After January 1966 the government purchase price of slaughter hogs weighing in excess of 115 kilograms will be reduced by one crown per kilogram, from 10.50 crowns to 9.50 crowns

These price changes have a number of objectives. The general increase in prices is designed to increase incentive in agriculture. At the same time, however, it is clear that the government intends to control the pattern of output, and hopefully reduce imports, through these price changes. There is a clear deemphasis of pork production while the production of beef, veal, and milk is being encouraged. Czech officials have indicated that

no major change in livestock numbers is anticipated in the next few years except a continued decrease in horses and some increase in sheep.

The increase in wheat area during the past few years is planned to continue and, coupled with higher prices and more fertilizer, is expected to boost output and reduce wheat imports. There has been much discussion in Czechoslovakia about stagnation in the production of those products which the country imports in large quantities--grain, vegetables, fruit, and oilseeds. Some Czech officials point out that it would be far more rational for Czechoslovakia to produce more grain,--both for food and feed--and thereby import less, than to pay too much attention to production of such crops as sugar beets. The argument for sugar beets has been that sugar exports provide needed foreign exchange. But it is pointed out that sugar beet production is expensive and much of the foreign exchange accruing from sugar exports must be expended for grain imports. Although it has not been mentioned, a part of this concern may well be caused by the fact that until recently most of Czecholovakia's grain imports came from the Soviet Union but imports from Western countries have increased in the past year or two, thus making the hard currency foreign exchange problem more acute.

In some respects similar arguments are made for rapeseed production. The government has undertaken to further the output of rapeseed, despite declines in recent years, by higher prices and exchanges of livestock feed for rapeseed sold to the government. Winter-kill losses, which have been extensive in some recent years, are being partly reduced by shifting rapeseed production to the traditional potato growing regions where winter conditions are less severe. The area in rapeseed is planned to reach about 50,000 hectares in the future.

Many of the measures discussed above are part of the overall plan for Czech agriculture during the remainder of this decade. That plan, in general, seeks to raise agricultural output (which, as in East Germany, has been fairly constant for a decade) by increasing prices and incentives, raising machinery and fertilizer inputs, improving methods of planning and organization, and a general maintanance of the status quo in the overall structure of agriculture. For most of the East European countries which have more or less fully collectivized agriculture--East Germany, Czechoslovakia, Hungary, Rumania, and Bulgaria--there appears to be a strong inclination in the governments to live with the present structure and improve its operation by according a higher priority to agriculture in the entire economy. Since this is basically a new course for these countries, it is difficult to appraise the immediate and longer-run results. Nevertheless, the present programs depart from the past in that they involve no further major overhauls of farm ownership; in general they raise incentives substantially, take a more permissive view toward the private sector, and involve fairly heavy commitments of resources to agriculture.

Food situation: The food situation in Czechoslovakia in 1965 reflects the difficulties in crop production in the past 2 or 3 years.

Fruits and vegetables were in relatively short supply in 1965--in 1964 supplies were at record highs--and considerable difficulty with potato supplies was evident.

Since the mid-fifties, per capita consumption of some products has risen substantially; meat, meat products, and eggs, for example. Smaller increases have taken place in fats, oils, and sugar. Per capita consumption of fruits and vegetables has been almost unchanged throughout the decade, while consumption of grain products, dairy products, and potatoes has declined.

However, the slow increase in the output of meat and dairy products since 1962, and the general stagnation in fruit and vegetable output, caused fairly sharp increases in per

Table 14.--Czechoslovakia: Principal agricultural imports and exports, average 1955-59, annual 1960-64

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Imports:						
Meat and meat products 1/	80	99	83	89	96	62
Butter	12	14	17	15	20	10
Eggs 2/	54	70	74	32	23	64
Wheat	946	1,486	1,004	927	1,365	1,489
Rice, milled	99	135	85	82	88	89
Coarse grains 3/	686	1,099	638	702	653	1,121
Fruits	124	111	144	158	159	184
Vegetables	72	113	106	137	119	112
Nuts	5	7	7	5	8	7
Coffee, cocoa beans, and tea	18	22	30	22	26	26
Wine 4/	254	461	409	390	384	474
Tobacco	14	18	20	13	13	18
Oilseeds	126	109	122	121	100	101
Cotton	87	103	122	92	105	106
Jute	12	14	17	18	20	14
Exports:						
Eggs 2/	63	101	154	54	99	74
Coarse grains 5/	190	201	225	214	246	217
Hops	3.3	3.7	4.3	3.7	4.9	5.4
Sugar, refined	263	293	662	528	513	359
Beer 4/	6/ 259	421	468	465	442	326

1/ Including animals for slaughter in slaughter weight equivalent. 2/ Millions, fresh equivalent. 3/ Years 1960-1964 include rye imports from USSR. 4/ 1,000 hectoliters. 5/ Malt in terms of barley. 6/ Less than 5 years.

Sources: Statisticka Rocenka CSSR, 1965 and Vneshnyaya torgovlya SSSR, 1964 g.

capita consumption of potatoes and grain products in 1963 and 1964. These higher levels probably were maintained in 1965.

Because of the administered price system in Czechoslovakia, changes in market supplies are not usually reflected in retail price changes. The supply is rationed by means other than price. Retail prices of a number of foodstuffs were increased in 1964, especially meat products. At the same time prices for eggs and a variety of vegetables were reduced. Further price reductions were effected in December 1964 on bacon, lard, margarine, and wine. Crop difficulties in Czechoslovakia in 1965 have caused many consumers to believe that prices will increase again, and Czech officials have attempted to forestall rumors to that effect. It is not unlikely however, that some increases in retail price will occur before the 1966 crop season.

Foreign Trade: Czechoslovakia imports large quantities of wheat, feed grains, meat, fruits, vegetables, tropical products, oilseeds, and cotton (table 14). She exports relatively few agricultural products, of which feedgrains eggs, sugar, and beer are the most important (table 14). Grain imports customarily have come from the Soviet Union, but that country's grain problems in the past 3 years have reduced these supplies, and Czech imports of grain from Western countries have increased. Nevertheless, despite a poor crop in the Soviet Union in 1965, the Czech government has stated that it will receive 1.3 million tons of wheat from the Soviet Union. Larger than average feed grain imports from Western countries are likely during 1965/66.

In 1964 Czechoslovakia imported 2.6 million tons of grain, the largest quantity ever. This included 1.5 million tons of wheat; 563,000 tons from the USSR and 618,000 tons from Canada. She imported about 25,000 tons of soybeans from the United States and 31,000 tons of sunflower seed from the Soviet Union.

Agricultural imports usually account for slightly more than 20 percent of total imports; and a large percentage of this is accounted for by the Soviet Union, roughly 40 percent of total agricultural trade. Meat, fruit, and vegetables are imported primarily from other communist countries in Eastern Europe. Bulgaria supplies most of the eggs and tobacco. The bulk of cotton imports are from the Soviet Union, the Middle East being second. Record cotton crops in the USSR in the past 3 years suggest that the Soviet Union will remain dominant in Czechoslovakia's cotton imports.

Although there are indications in the new Czech agricultural program suggesting a desire to reduce the level of agricultural imports, it would appear that they will continue at the level of recent years. Grain output in the USSR in coming years will have much to do with the likelihood of maintaining the level of present grain imports from Western countries. In Czechoslovakia--as in East Germany which has depended heavily on the USSR for wheat imports in the past--Soviet wheat difficulties have resulted in greater emphasis upon domestic wheat production.

U. S. agricultural exports to Czechoslovakia in 1964 amounted to $8.5 million including wheat, rye, corn, barley, soybeans and oil, hops, lard and hides and skins. U.S. agricultural imports from Czechoslovakia amounted to only $955,000, of which canned cooked hams made up $503,000. Wool and chocolate are also imported

HUNGARY

Production: Agricultural production in Hungary remained unchanged in 1965 (table 1). Crop production was down 2 percent while livestock product output was up 6 percent. 22/ Crop output was reduced by unfavorable weather while the livestock sector suffered from foot-and-mouth disease and inadequate feed supplies. This reduced livestock numbers sharply but increased production of livestock products. Output in 1965 is estimated to be 6 percent above the 1957-59 average.

The fall of 1964 was unusually wet in Hungary and plowing was not completed over large areas. In some regions, sowings of winter grain were washed out by heavy rains. Conditions improved with the onset of spring, and planting was started 2 weeks earlier than in 1964. However, general rains which began in early April and persisted into May caused extreme damage in the western half of the country. By the end of June, 135,000 hectares of spring crops had not been planted because of floods and an additional area of 35,000 hectares had failed to germinate. The summer was cool and rainy, further retarding growth and facilitating the spread of weeds and plant diseases.

22/ The USDA index for Hungary does not take into consideration changes in livestock numbers. If the sharp drop in livestock herds in 1965 had been valued, total agricultural output in Hungary would have declined in 1965.

The sown area of all crops, except corn, declined but yields of most grains were high (table 15). Wheat production achieved another record high in 1965, the second record after the 1963 crop which was the poorest in post-war Hungarian experience. Barley and rye also fared well. Oat production declined slightly. The output of corn, the most important feed grain, declined sharply and was even below the 1957-59 average.

The fruit and grape crops suffered heavy damage from the cool, wet summer. The 1965 grape harvest was down sharply and fruit production, especially apples, declined. Vegetable production was down slightly from 1964, a poor year, and below the 1957-59 level. The potato crop was also down slightly compared to the poor crop of 1964 and about 10 percent lower than the 1957-59 average. Sugar beet output declined slightly, but because of an increase in the sown area was well above the 1957-59 average. Sunflower seed output was below that of 1964, also a poor year, and even below the 1957-59 average. Tobacco production was also down significantly and only two-thirds of the 1957-59 average.

The livestock sector was hard hit by foot-and-mouth disease. Because of this and the poor feed supply during 1965, the upward trend in livestock numbers noted during early 1965 turned down sharply. Livestock numbers in early 1966 will be down by about 30,000 cattle, 8,000 cows, and more than 500,000 hogs. Sheep and poultry numbers are expected to be up. Pork, beef, and poultry meat output increased in 1965 as did egg production. Milk and wool production was down.

Inputs: In 1965 Hungarian agriculture received 7,250 new tractors, raising the total number to 59,000 compared to 32,000 in 1959 and about 13,000 in 1950. Deliveries of fertilizer increased about 4 percent, bringing the rate of application to 68 kilograms of plant nutrients per hectare of arable land, the third highest application rate in Eastern Europe (table 25). Capital investment in Hungarian agriculture has accounted for about 20 percent of total investment in the past 3 years. It was at this level in 1960, but fell below it in 1961 and 1962.

The increased level of inputs undoubtedly helps to explain the relatively good yields in 1965, despite adverse weather conditions. Top dressing of winter grains, for example, was up for the 1964/65 crop and increased again during 1965/66. Much of the fertilizer now available is of better quality. More pesticides and herbicides are also being used.

Nevertheless, Hungarian officials acknowledge that a great deal of the current investment, including larger supplies of fertilizer and machinery, constitutes a holding action against the loss of labor and the burden of replacing old or unusable equipment and buildings. This phenomenon is not unusual in those East European countries where collectivization was pushed rapidly to completion. The structure of collective and state farms often necessitated major new construction and the abandonment of buildings and equipment which were more appropriate to peasant farming.

In Hungary, where labor was plentiful, mechanization at first proceeded slowly. Recently, however, a more rapid movement of people off farms, a rising average age of farm workers, and a combination of other factors have led to many imbalances between the use of machinery and labor. Under certain circumstances more machinery in one phase of an operation leads to a greater demand for labor in another phase. Much labor is required during harvesting, for example, which has received less attention in the mechanization process than other aspects of crop production. The fact that mechanization and fertilization help to produce larger crops only increase the demand for labor during the harvest.

Policy: The 1966-70 plan for Hungarian agriculture has not been released. However, it is clear from official statements that the

Table 15.--Hungary: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	1,785	1,959	1,523	2,059	2,350	1,184	1,095	976	1,112	1,086
Rye	434	233	215	265	285	383	232	209	247	245
Barley	930	1,144	869	818	1,000	520	548	486	522	500
Oats	237	115	106	55	50	172	84	90	71	57
Corn	3,208	3,241	3,551	3,509	3,150	1,336	1,289	1,289	1,209	1,227
Potatoes	2,558	1,882	2,026	1,650	1,600	237	209	232	210	206
Sugar beets	2,209	2,653	3,434	3,554	3,400	105	125	118	133	121
Sunflower seed	102	131	126	114	100	86	124	121	108	97
Tobacco	30	19	27	29	21	19	19	20	22	23
Livestock products:										
Meat 2/	380	459	454	1/ 450	500					
Poultry 3/	122	138	146	1/ 150	160					
Milk, cows 4/	1,907	1,806	1,802	1/1,800	1,700					
	Million units									
Eggs	1,717	1,835	1,850	2,200	2,325					
Livestock: 5/	1,000 head									
Cattle	1,971	1,987	1,906	1,883	1,964					
Hogs	5,520	6,409	5,428	6,358	6,963					
Sheep	2,026	2,850	3,043	3,305	3,350					
Horses	720	374	339	323	315					

1/ USDA preliminary estimates. 2/ Beef, veal, pork, mutton and small quantities of horse meat, slaughter weight. Excludes fats and offals, but includes slaughter weight equivalent of exports of live animals. 3/ Dressed weight. 4/ Converted from hectoliters; includes milk sucked by young animals, but excludes goat and sheep milk. 5/ Number as of March.

Sources: Mezogazdasagi Statisztikai zsebkonyv, 1964, Statisztikai Havi Kozlemenyek, and FAO Production Yearbook, Vol. 18, 1964.

present rate of agricultural development is viewed as unsatisfactory. It seems likely, therefore, that when the 1966-70 plan is announced, it will follow the pattern of other East European countries, calling for substantial increases of captial, machinery, and fertilizer.

During 1965 the Hungarian government published a number of decrees concerning the planning of agricultural procurements, the mechanism through which these plans will be implemented, and the organizations which will be involved. Previously, the kinds and quantities of commodities to be produced were determined by government procurement agencies and the local government councils. The councils then passed these plans to collective farms at the time the farms were supposed to be formulating their own plans for the coming year. In practice the procurement requirements dominated the decisions made by the farms and were difficult if not impossible to alter. The procurement agencies relied upon the local councils to enforce compliance. In recent years, however, it has become evident that this system, which was established during the early stages of collectivization when agricultural prices were confiscatory and resistance to collectivization was strong, has discouraged initiative at the farm level, resulted in the misuse of resources, and stifled output.

The system has been changed significantly except for food grains. Farms are required to maintain food grain area at the 1964 level and deliver fixed quantities to the government.

The collective farm will plan its output on the basis of its productive capabilities. These plans will be submitted to the procurement agencies, not the local councils. Freedom of action of collective farms will be limited through economic, political, and commercial means, however, and there is a general stipulation that the plans presented by farms must reflect the country's requirements. Collective farms will, apparently, be able to some extent to choose the procurement agency with which they wish to deal and the procurement agencies will exercise a choice between farms. Local councils will still retain control over the supply of fertilizer and other inputs, but the local council will not participate directly in the formation of plans.

Although there is much latitude for subverting the spirit of the law, the new system does permit greater interaction between individual collective farms and various government procurement agencies.

The third feature of the new legislation involves the pricing mechanism. Incentive prices and more flexibility in prices paid for agricultural products are to be employed. Increases in government purchase prices for a number of agricultural commodities were announced in December 1965 to become effective in January 1966.

Food situation: The food situation in Hungary deteriorated during 1965. Although the food grain crop covered the needs of the country, and some increase in meat output took place, the supply of potatoes, vegetables, fruits, and dairy products declined. Not only was a smaller quantity of these products available in 1965, but the quality was also poorer. Food prices started to move upward in 1964, when prices of many staples--potatoes, carrots, cabbage, and green peppers--were 20 to 50 percent higher than 1963. The higher purchase prices for selected agricultural commodities announced late in December 1965 became effective on January 21, 1966; some of these increases will be passed on to consumers. Retail prices of pork will increase 30 percent, beef, 50 percent, and milk products (except whole milk), from 15 to 19 percent. Later in 1966 lard and bacon prices are to be reduced by 20 and 11 percent respectively.

Foreign trade: Agricultural trade contributes substantially to the total foreign trade earnings of Hungary. In the period 1960-64 agricultural exports amounted to approximately

Table 16.--Hungary: Principal agricultural imports and exports, average 1955-59, annual 1960-63

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Imports:						
Meat	7.0	24.9	18.9	20.3	37.0	43.4
Wheat and wheat flour	306.4	314.4	448.0	225.4	340.4	332.0
Rice, milled	23.2	17.6	21.1	17.4	18.8	11.2
Coarse grains	119.7	41.5	184.5	483.7	279.9	240.6
Fruit, citrus	10.6	18.8	18.6	32.2	28.1	36.3
Sugar, refined	1/ 46.2	27.7	80.8	109.0	86.2	n.a.
Coffee	2.9	3.3	3.3	5.5	6.9	11.0
Cocoa beans	3.9	4.1	3.3	6.3	7.2	7.0
Tobacco	5.0	3.3	7.5	6.5	4.6	5.0
Hides and skins	15.7	18.6	21.1	19.1	18.8	21.4
Cotton	46.5	62.3	68.0	65.1	63.6	n.a.
Wool, scoured	3.4	5.7	4.3	3.8	3.8	n.a.
Jute	6.8	8.2	6.4	9.3	8.0	9.1
Fats and lard	5.0	11.1	19.4	12.1	17.8	17.8
Tallow	10.2	7.9	7.7	7.1	4.6	3.8
Exports:						
Cattle, for slaughter 2/	70.9	123.4	92.4	97.2	143.9	107.3
Pigs, for slaughter 2/	156.1	104.9	77.8	155.2	145.9	51.7
Meat	16.6	22.9	21.7	40.7	36.8	31.0
Poultry, for slaughter	14.2	15.2	20.7	26.4	27.2	34.1
Eggs, fresh 3/	153.2	117.5	135.1	60.0	90.7	197.6
Butter	4.9	5.7	4.0	4.7	5.4	4.4
Cheese	3.7	5.9	7.7	7.5	8.8	8.4
Wheat and wheat flour	119.4	68.1	120.2	47.8	57.5	n.a.
Corn	67.8	37.6	53.5	34.2	25.5	63.9
Fruit, fresh	77.9	55.8	146.7	113.0	207.0	204.9
Beans	18.5	10.3	2.7	4.7	15.5	11.7
Peas	10.8	28.1	27.3	31.4	21.6	17.6
Onions	18.3	24.6	10.4	23.4	41.9	36.0
Potatoes	32.8	65.5	69.8	24.3	42.6	37.9
Vegetables, fresh	4/ 32.9	92.1	71.7	98.6	138.3	105.0
Sugar, refined	1/ 47.2	135.4	177.0	214.8	222.9	147.0
Wine 5/	317.8	508.5	410.8	335.2	401.8	569.4
Vegetable oils	21.0	20.6	14.5	22.8	28.9	21.2
Fats and lard	7.5	6.6	10.5	9.4	8.4	9.7

1/ Both raw and refined in unspecified quantities. 2/ 1,000 head. 3/ Millions. 4/ 1958-59 average. 5/ 1,000 hectoliters. n.a. = not available

Source: Statisztikai Evkonyv, 1957, 1961, and 1964.

20.8 percent of total exports, while imports accounted for approximately 9.4 percent of the total imports.

Food and agricultural products are particularly important earners of hard currency. Data for 1964 indicate that almost half of the total value of agricultural exports was sold to hard currency countries.

Agricultural imports include wheat and wheat flour, feed grains, refined sugar, and cotton (table 16). A substantial share of these imports is exchanged under bilateral agreements with the Soviet Union and other East European countries. The most significant development in the import pattern in recent years has been the sharp increase in feed grain imports, reflecting the planned use of low priced feed grains for increasing the domestic supply and expanding exports of livestock products.

Principal exports in recent years have been live cattle, eggs, fruits and vegetables, and wine (table 16). Most of these commodities have been marketed in Western Europe.

Hungarian agricultural imports from the United States in 1964 amounted to $12.8 million. Leading commodities imported included soybean oil cake, wheat, soybeans, cotton and nonfat dry milk. United States agricultural imports from Hungary in 1964 amounted to only $331,000.

RUMANIA

Production: Agricultural production in Rumania in 1965 was up 4 percent compared to 1964 and up 21 percent compared to the 1957-59 average. Crop production increased 7 percent while livestock products decreased 2 percent.

Weather conditions in Rumania during the crop year 1964/65 were very favorable for development of fall sown grains, but a cool spring and low and poorly distributed rainfall, particularly during June through August, adversely affected spring crops.

Production of small grains was reported to be almost 40 percent above the 1964 level; this was due almost entirely to the largest wheat crop in Rumania's history--about 5.5 million tons, 55 percent above the 1957-59 average (table 17). The output of corn, Rumania's major grain, dropped sharply as a result of the summer drought. The output of other grains changed little from the preceding year. The potato harvest was up slightly over 1964 while the output of sugar beets and sunflower seeds was down sharply. However, 1964 was reportedly an exceptionally good year for both sugar beets and sunflowers, so that the level of output of these 2 crops in 1965 was still above the 1957-59 average and above output in 1962 and 1963. Fruit production was reported to be good while vegetable output was little changed from 1964. The supply of nongrain feeds was also reported to be above the 1964 level.

Livestock numbers, with the exception of horses, were above the 1957-59 level in 1965 with the largest increase reported in hogs. Cattle numbers continued to recover from the sharp decline of 1962. Hog numbers jumped up during 1964 as a consequence of the good corn crops in 1963 and 1964. During 1965 a small increase in cattle numbers probably occurred, but hog numbers undoubtedly declined due to the drop in corn production.

The output of meat, milk, eggs, and wool increased during 1965 and was well above the 1957-59 average.

Inputs: During 1965 Rumanian agriculture received 9,500 tractors, 5,000 combines, some other machinery, and an additional 50,000 tons of mineral fertilizer in terms of plant nutrients. The delivery of only 9,500 tractors to agriculture in 1965 was a drop from the 12,500 and 10,300 tractors delivered in 1964 and 1963 respectively. Annual deliveries of tractors to agriculture have been more erratic in Rumania than in most other East European countries. In 1950, 3,500 were delivered, but only 2,700 and 1,700 were delivered in 1955 and 1956. From 1957 to 1961

Table 17.--Rumania: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	3,538	4,054	3,799	3,824	5,500	2,976	3,043	2,874	2,959	3,000
Rye	135	75	78	92	92	138	77	80	91	80
Barley	390	419	351	348	350	295	251	224	196	196
Oats	319	167	124	79	77	321	174	130	89	90
Corn	5,225	4,932	6,023	6,692	5,500	3,641	3,107	3,379	3,319	3,500
Potatoes	2,911	2,597	2,692	2,618	2,750	271	299	319	304	305
Sugar beets	2,407	2,180	2,298	3,668	2,850	158	155	179	190	190
Sunflower seed	357	450	506	518	470	384	420	464	467	470
Tobacco	31	26	40	42	40	42	38	41	40	40
Livestock products:										
Meat 2/	779	937	816	990	1,100					
Poultry 2/	73	99	94	112	115					
Milk, cows 3/	2,536	2,886	2,734	2,742	2,575					
Wool	20	24	23	25	25					
	Million units									
Eggs	2,054	2,568	2,258	2,456	2,600					
Livestock: 4/	1,000 head									
Cattle	4,488	4,707	4,566	4,637	4,756					
Hogs	3,719	4,665	4,518	4,648	6,034					
Sheep	10,845	12,285	12,168	12,400	12,734					
Horses	1,244	1,013	780	709	689					

1/ USDA preliminary estimates. 2/ Liveweight. 3/ Converted from hectoliters (1.03052). 4/ Numbers as of Jan. 1.

Sources: Anuarul Statistic al R.P.R., 1965 and Dezvoltarea Agriculturii Republicii Populare Romane, 1965.

deliveries increased from 4,200 per year to 12,100, and fell to 9,300 in 1962. The number of tractors in Rumanian agriculture has increased from 13,700 in 1950 to 75,400 in 1964.

Because of the increase in the supply of tractors, arable land per tractor declined from 684 hectares in 1950 to 130 hectares per tractor in 1964 (table 25). On state farms, which receive preferential treatment, arable land per tractor declined from 168 hectares in 1950 to 69 in 1964.

Consumption of mineral fertilizer in Rumania is low, even by East European standards, although there has been a sharp increase in the last 3 years. In gross weight, total consumption amounted to only 22,600 tons in 1950. It increased fairly steadily after that, reaching 420,000 tons in 1961; utilization was about the same in 1962, but increased to 773,000 tons in 1963. Consumption of mineral fertilizer dropped slightly in 1964, but is reported to have increased in 1965. The current level of fertilizer consumption in terms of plant nutrients is about 16 kilograms per hectare of arable land (table 25). Most of this fertilizer is allocated to the favored state farms whose application rate is 7 times as high as that of collective farms.

Policy: Rumania has announced a major new agricultural program for the period 1966-70 containing many changes in policy. The lack of significant progress between 1961 and 1964 has been acknowledged by Rumanian officials. The new program is designed to overcome this stagnation by raising prices of agricultural products; by increasing inputs of machinery, fertilizer, and capital; and by reorganizing the management and organization of agriculture.

Although long term plans indicate only that the state will continue to purchase agricultural products at "advantageous and mutually agreed prices," major increases in government purchase prices for farm products were introduced recently. In May 1965 state purchase prices for milk were increased by 23 percent; late potatoes, 25 to 33 percent, fat hogs, 16 percent, plum brandy, 43 percent, and wine grapes, 44 percent.

State investment in agriculture during the period 1966-70 is planned to increase 60 percent from the level of 1960-65. Collective farms are also expected to generate more investment capital from their own resources, which will add to the total planned state contribution. A major share of state investment funds is to be allocated to agricultural machinery enterprises and to fertilizer plants. By 1970 the plan calls for "complete mechanization" of wheat, corn, potato and sugar beet production. Much field work is still done by hand as a result of the Rumanian government's policy of utilizing the relatively large supply of labor in agriculture. Fertilizer output is planned to reach a million tons of plant nutrients by 1970. Additionally, state investment will be used to expand the irrigated area by 400,000 hectares.

Management has also been taken to task. The Higher Council (or Ministry) of agriculture in Rumania has been strongly criticized, its functions altered, and its staff reduced. In the future the Higher Council will be required to establish overall plans for the performance of agriculture, insure that these plans are complied with, and provide specialized technical guidance to farms and local and regional organizations. At the same time, some of the responsibilities of the Higher Council will be assigned to strengthened regional organizations.

The new program also calls for the establishment of collective farm organizations at the regional and at the national level. The role of these "unions of collectives" appears to be one of implementing government policy rather than providing collectives with a greater voice in agricultural decisions. They are supposed to guide and assist the flow of resources and inputs to agriculture, facilitate the flow of products from farm to market, and improve the performance of collective farms in general. Undoubtedly these proposed organizations could improve agriculture's performance, but their

Table 18.--Rumania: Principal agricultural imports and exports, annually 1958-64

Commodity	1958	1959	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -						
Imports:							
Rice, milled	17.0	20.9	13.5	15.8	23.1	43.1	29.2
Fruit, citrus	7.6	7.6	15.5	18.3	21.1	19.6	20.0
Olives	4.5	5.4	5.1	7.0	6.1	8.1	6.4
Sugar, refined	39.9	28.7	1/	30.4	37.0	44.9	n.a.
Cocoa beans (including powder cocoa)	.5	.8	2.8	2.1	2.5	3.8	3.7
Hides and skins	11.3	8.7	5.2	5.3	13.6	6.5	12.2
Rubber, crude	5.3	6.3	9.3	11.5	13.8	19.2	22.3
Cotton, lint	46.1	42.2	50.7	60.8	60.8	65.4	66.6
Wool	2.8	2.5	2.4	2.9	0.3	0.3	0.8
Edible vegetable oil	32.4	22.7	2.8	2.6	1.5	0.8	2.0
Exports:							
Eggs 2/	49.0	67.9	121.4	107.7	131.6	81.2	148.3
Grain, total (excluding seed)	476.2	222.8	731.0	1208.4	1067.9	1408.8	1234.2
Fruit, fresh	14.5	41.6	19.6	47.0	42.8	69.0	53.6
Fruit, canned	77.1	55.9	65.8	85.2	75.9	107.6	93.6
Grapes	34.6	31.6	36.8	24.5	54.9	52.0	40.7
Vegetables, fresh	12.4	17.8	25.3	43.5	71.1	82.1	105.4
Vegetables, canned	4.2	4.1	6.3	11.7	15.4	20.7	29.5
Potatoes	4.3	9.2	27.4	93.0	20.9	38.1	8.5
Sugar, refined	n.a.	n.a.	76.7	147.4	310.8	75.6	52.9
Wine	38.3	24.0	42.6	31.3	20.7	26.8	42.4
Wool	0.7	1.4	1.1	1.0	0.9	1.0	0.9
Edible animal fats	n.a.	4.6	12.7	9.6	8.8	7.9	12.0
Edible vegetable oil	n.a.	2.4	32.0	23.7	47.6	39.7	37.1
Castor oil	4.5	6.8	4.8	6.1	7.9	1.4	2.9

1/ Magnitude less than 0.1 of unit. 2/ Millions. n.a. = not available

Source: Anuarul Statistic al R.P.R., 1965.

effectiveness will depend to a great extent on how much independent action is allowed, and how much consideration is given to ideas and advice from the farm level.

The new program also calls for the establishment of a pension system for collective farmers. Some collective farms grant pensions for old age and sickness, but coverage is limited and not uniform. Ultimately the system will be based on retirement at age 65 for men and 60 for women, after having worked on the collective for 25 and 20 years respectively.

A politically important policy announcement made in 1965 was the government's recognition of the inviolability of the household plot. The government has stated that it will attempt

to redistribute land or make land available to members who do not have household plots, but at the same time it has tightened its control over the size of the plots by restricting the size of plots to 800 square meters.

Regular monthly payments to collective farm workers are also being instituted. Some farms have made such payments, but most continue to pay members much less often--usually at the end of the year. Wages for state farm workers were increased from 10 to 12 percent in September 1965.

Altogether these measures represent a quantitative and qualitative increase in incentives to farm workers and managers. Their effectiveness will depend on their implementation.

Food situation: The supply of most food items in the last part of 1965 and early 1966 should be as good as or better than in 1964. There probably will be some shift from corn to wheat, reflecting the relative abundance of the latter and the shortage of the former. Meat, milk, and eggs should be somewhat more plentiful than in 1964, while the supply of vegetables and fruits should be roughly comparable to a year earlier.

During 1965 the government reduced the retail prices of fruits and vegetables. These lower prices were financed from the government budget by lowering the turnover tax and reducing the government's margin for handling fruits and vegetables. Government purchase prices remained unchanged.

In May 1965 retail prices of butter, cream, cheese, and bottled milk were increased. Prices for bulk milk, powdered milk, and yogurt were not changed. Retail prices for plum brandy and wine were also increased. The higher purchase prices for late potatoes and pork were not passed on to the consumer.

Foreign trade: Rumania imports small quantities of olives, cocoa beans, and hides and skins, and increasingly more citrus fruit, rubber, cotton, and rice. Imports of vegetable oils have declined from approximately 23,000 tons in 1959 to a minimum quantity in 1964, reflecting the significant improvement in domestic vegetable oilseed production (table 18). Small quantities of grain are also imported, but not reported in Rumanian statistical publications.

On the export side, Rumania has progressively become a more important exporter of eggs, grain, fruit, grapes, vegetables, and vegetable oils. Fairly constant quantities of castor oil, animal fats, wine, and grapes are exported, while exports of sugar and potatoes have fluctuated sharply (table 18).

The value of exports and imports of agricultural products increased in 1964. Although total imports exceed total exports, agricultural exports greatly exceed agricultural imports; the former accounting for about 20 percent of total exports and the latter from 5 to 10 percent of total imports. A sizable drop in 1966 corn exports may result from the sharply reduced corn crop in 1965.

Rumania imported $2.1 million of agricultural commodities from the United States in 1964. Cotton, tallow, and wheat accounted for most of these imports. Rumanian agricultural exports to the U.S. amounted to only $220,000.

BULGARIA

Production: Agricultural production in Bulgaria during 1965 was just slightly higher than in 1964 and 18 percent above the 1957-59 level. Crop production declined slightly while livestock output rose about 1 percent (table 1).

Weather conditions were favorable for the sowing of winter crops in the fall of 1964, and timely spring rains further assisted the development of winter crops and the sowing of spring crops. However, an exceptionally severe drought which set in at the end of May and lasted all

summer and fall lowered the yields of spring crops sharply, and damaged vegetables, fruits, and hay crops.

Despite the drought, record crops of winter wheat and barley were reported in 1965 (table 19). Oat and corn production, however, declined. Wheat production was about 45 percent above the 1964 level and 24 percent above the 1957-59 average.

Total food grain production was reported to be up 34 percent, primarily because of record wheat yields; feed grain output was reported down 22 percent. Sunflower seed production was down slightly although the area increased; cotton production declined 14 percent; tobacco, 22 percent; and sugar beets, more than 36 percent. Production of vegetables and fruits was also lower in 1965, but grape output was reported up sharply due in large part to expanded vineyard area. Significant declines were reported in the production of potatoes and beans.

Cattle and poultry numbers are reported to have remained at about the 1964 level, pig numbers increased nearly 25 percent, and sheep numbers were up slightly. The output of livestock products reportedly increased during 1965. Meat production was up for all types of meat, with the largest increase developing in pork production. Production of milk, eggs and wool increased slightly.

In 1965 government purchasing organizations bought substantially more food grains, sunflower seed, tomatoes, grapes, prunes, meat, milk, and eggs than during 1964.

Inputs: Mineral fertilizer deliveries to agriculture increased from less than 70,000 tons in 1952 to more than 700,000 tons in 1963. Kilograms of plant nutrients per hectare of arable land rose from 4 in 1952 to 36 in 1963, and sharp increases were reported for 1964 and 1965 (table 25). Application rates for certain crops, such as wheat, corn, vegetables, industrial crops, and some fruits are much higher. Pesticides and herbicides are also being used in larger quantities.

Tractors, in terms of 15 horsepower units, increased from 8,657 in 1950 to 56,000 in January 1963 and increased at the rate of about 7,000 a year in 1964 and 1965. Of the total number of tractors in 1964, 13,600 were in machine-tractor stations, 3,700 in state farms and 32,600 in collective farms.

Because of Bulgaria's heavy concentration on fruits and vegetables, the irrigation system is considerable and being expanded. The irrigated area in 1965 was reported to be over 900,000 hectares, or about 20 percent of the arable land. Not all of this land is effectively utilized, however, and many examples of poor utilization have been reported. Nevertheless, for a country the size of Bulgaria the amount of land irrigated or irrigable is quite large. The importance of irrigation for maintaining output is obvious in a country which experience frequent droughts. Plans call for approximately 923,000 hectares to be irrigated in 1966, with corn occupying about 230,000 hectares. Some wheat is also to be irrigated.

Considerable attention has been given in the past 2 or 3 years to better quality seed, hybrid seeds, and higher seeding rates which help to explain the reasonably good yields in 1965. The high yielding Soviet wheat variety "Bezostaya 1" was reportedly sown on 60 percent of the wheat area in 1965 compared to only 32 percent in 1964 and 12 percent in 1963. Present seeding rates are reported in the range of 200 to 220 kilograms per hectare; future plans call for increasing this to 280 to 300 kilograms per hectare.

Trends in area and production: For all intents and purposes, Bulgarian agriculture is fully collectivized. In 1963, 82 percent of the total sown area of 3,916,600 hectares was in collective farms. Only 120,000 hectares were owned by individuals, 316,100 were used as the private garden plots of collective farm

Table 19.--Bulgaria: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964 1/	1965 1/	1957-59 average	1962	1963	1964 1/	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	2,381	2,081	1,892	2,030	2,950	1,422	1,244	1,188	1,270	1,250
Rye	113	49	56	50	64	111	59	57	60	53
Barley	494	599	618	620	916	260	303	343	310	371
Oats	194	114	133	154	110	170	152	133	145	145
Corn	1,293	1,556	1,732	1,858	1,400	731	651	660	675	627
Potatoes	328	361	415	400	350	34	43	43	43	43
Sugar beets (factory)	1,255	1,121	1,122	1,850	1,000	63	72	69	75	62
Sunflower seed	236	357	336	337	330	207	272	254	237	251
Tobacco	88	107	105	113	100	107	120	124	130	130
Livestock products:										
Meat 2/	405.9	473.5	448.4	452.0	490.0					
Poultry 2/	36.6	44.8	44.7	45.0	48.0					
Milk, all 3/	977.0	1,127.0	1,170.0	1,150.0	1,200.0					
	Million units									
Eggs	912	1,316	1,246	1,291	1,400					
Livestock: 4/	1,000 head									
Cattle	1,442	1,582	1,582	1,494	1,510					
Hogs	1,838	2,331	2,066	2,097	2,607					
Sheep	7,986	10,161	10,107	10,308	10,440					
Horses	424	301	277	256	250					

1/ USDA preliminary estimates except for 1964 livestock numbers. 2/ Liveweight. 3/ Of which cows' milk accounts for 70 percent, sheep's milk about 25 percent and the remainder goat and buffalo. 4/ Number as of Jan. 1.

Source: Statisticheski godishnik na narodna republika Bulgariya, 1964.

workers, and 250,300 were held by state farms. Collectivization programs developed steadily up through 1955 when about 55 percent of the sown area was collectivized. During 1955-57 the rate of collectivization slowed down, but by 1960 most of the sown area, outside of marginal areas, had been collectivized.

Collectivization has effected major changes in the cropping pattern in Bulgaria. The total grain area has declined from the level of the early 1950s. In 1950, 3 million hectares of grain were sown; in 1963, just under 2.5 million. The wheat area dropped from 1.45 million hectares to 1.2 million hectares, and rye from 230,000 to 57,000 hectares. The barley area increased from 245,000 hectares to 343,000 while oats dropped from 162,000 to 133,000 hectares. The area of corn for grain dropped from 756,000 hectares in 1950 to 634,000 hectares in 1960, but has been increasing since then.

Coincident with the decline in the grain area has been a noted increase in yields. Current grain output, therefore, is roughly comparable with that of the early fifties, if not higher. Wheat production has been close to 2 million tons throughout the entire period. Barley production has doubled, and corn output in recent years has been about twice the level of the early fifties.

The area of industrial crops declined sharply in the mid-fifties and then increased again with many shifts among the industrial crops. The area in sunflower seeds grew slowly from 215,000 hectares in 1950 to 272,000 in 1962, but declined during 1963-65. Major declines in the soybean and rapeseed area occurred between 1950 and 1963. This has been true of the other minor oilseed crops as well. The cotton area has been cut in half during the same period. On the other hand, the fiber flax area has increased; the tobacco area increased from 77,000 to 117,000 hectares; and the area of sugar beets increased from 39,000 to 69,000 hectares. The area in vegetables increased from 45,000 to 89,000 hectares and the potato area from 30,000 to 43,000 hectares. Feed crops more than doubled between 1950 and 1963, increasing from 310,000 to 730,000 hectares. The area of orchards increased from 62,000 to 175,000 hectares.

Over the past decade among the industrial crops, production of sunflower seed has doubled, tobacco output has risen 70 percent and sugar beet production has risen from about 350,000 to more than a million tons. Great increases in tomatoes, many other vegetables, and potatoes have taken place since 1950 and the output of nongrain feed crops has increased substantially. Very large increases in fruit and grape production have also taken place.

In the livestock sector, changing cropping patterns have resulted in substantial increases in meat production from approximately 300,000 tons in the early fifties to almost 500,000 tons in the early sixties. Milk output has increased from around 500,000 tons to 1.2 million tons during the same period, and egg output has doubled.

Policy: Despite these trends, which on the surface, are indicative of substantial progress, the agricultural situation since 1960 has not been particularly favorable. The major gains in output of both crop and livestock products were achieved by 1960 or between 1960 and 1962. Since that time output of most crops and livestock products has grown slowly; this is reflected in the present Bulgarian agricultural policy.

The recent economic policy changes which have been announced in Bulgaria follow the pattern of other East European countries. The unsatisfactory performance of the agricultural sector since the early sixties seems to have convinced the leaders of these countries that major changes are necessary. Because collectivization has been virtually completed, no major changes in the tenure system are planned.

The current plan emphasizes that further increases in output will have to come from increased incentives, larger quantities of inputs, improvements in the organization and management of agriculture, and more efficient use of resources. More specifically the Bulgarian government has prefaced its new agricultural program with the pronouncement that "grain production is the basis of agricultural production as a whole ... and will remain the No. 1 task for all agricultural workers as long as it has not been definitely solved." The plan for 1966 calls for food grain production to reach a level of 2.7 million tons and feed grains to reach 3.7 million tons. These quantities are said to be necessary to satisfy food requirements and to provide the feed necessary to produce the desired quantity of livestock output.

The grain plan is to be achieved, according to the program, through substantially increased quantities of fertilizer applied to grain crops, and price premiums and special grants of fertilizer for larger grain deliveries to the government. On the feed grain side, where the primary emphasis is corn and barley, 230,000 hectares of corn are planned to be irrigated in 1966. An increase in sunflower seed production to 400,000 tons and beans to 85,000 tons is also planned for 1966.

Fertilizer production in Bulgaria has increased in the past few years and construction of new fertilizer plants is being accelerated. Two of the existing fertilizer plants have been enlarged and 3 new plants are under construction. One of the 3 new plants is to begin production in 1966. By 1970 it is planned that Bulgaria's fertilizer requirements will be fully satisfied from domestic production.

A number of new organizations are being established to supervise specialized operations within agriculture that had formerly been the responsibility of the Bulgarian Ministry of Agriculture. These include farm machinery production, utilization of water resources, purchasing and marketing of farm products, and others.

Higher prices and premiums for improved production, especially production of marketable surpluses of commodities desired by the government, were also instituted. Additional efforts are being made to stimulate farming in mountainous areas by paying bonus prices for commodities in these areas.

The new program seems to reflect a somewhat more realistic and less doctrinaire attitude toward the private plots of individuals and the few remaining small private farms. Whereas the policy of recent years has been to neglect this sector of the economy or inhibit it wherever possible, the present policy appears to be one of utilizing it more fully without any concessions toward a return to private agriculture. During the first half of 1965 purchases of eggs from the household plots were almost as great as those from state and collective farms. The government also purchases sizable quantities of poultry, wool, essential oilseeds and other oilseeds from this sector. To stimulate this source of supply, the government will make available free sesame, lentil, and sorghum seeds to individuals who undertake to sell some of their output to the government. Individuals who contract to deliver livestock products to the government receive preferential prices on sugar beet tops, molasses, sunflower seed cake and other feeds.

It has also been reported that the Supply Cooperative and Provincial Cooperative Unions are reviewing the possibility of granting marginal or abandoned land to private plot holders. These individuals would be allowed to plant vineyards, oilseeds and forage crops to supply their own needs

Food situation: During 1965 the supply of grain and grain products for human consumption, and of milk, meat, and eggs increased; the supply of potatoes, sugar, vegetables, and fruits declined. The supply of vegetable oils has not increased since 1962 and has probably become somewhat tighter. In Bulgaria, however, because of the combination of government-owned retail stores with fixed prices

Table 20.--Bulgaria: Principal agricultural imports and exports, average 1955-59, annual 1960-63

Commodity	1955-59 average	1960	1961	1962	1963
	- - - - - - 1,000 metric tons - - - - - -				
Imports:					
Wheat	81.1	136.3	7.6	119.9	150.0
Rice, milled	4.1	13.0	12.4	13.0	n.a.
Sugar, refined	5.6	33.9	99.0	124.1	117.5
Rubber, crude	4.4	12.6	13.3	17.0	18.2
Cotton, lint	16.5	30.1	30.3	47.5	31.8
Wool, scoured	1.7	2.1	1.3	1.1	1.7
Hides and skins	1.6	2.1	2.5	2.5	3.6
Exports:					
Pigs, for slaughter 1/	59.0	95.8	137.2	138.6	91.5
Pork	15.6	14.1	13.1	10.0	4.5
Poultry meat	2.5	5.2	7.2	6.8	6.6
Cheese	2.7	8.8	10.7	10.5	4.0
Eggs 2/	250.6	436.5	534.0	442.2	331.2
Corn	54.4	137.0	104.3	82.7	73.5
Fruits, fresh 3/	92.9	132.2	198.1	260.9	291.7
Fruits, other	n.a.	63.6	89.4	79.3	95.3
Vegetables, fresh 4/	65.8	310.1	324.3	317.6	286.2
Vegetables, other	36.0	75.5	121.2	125.7	115.6
Wine, grape	17.9	34.6	40.1	37.9	52.4
Tobacco, oriental	42.2	69.4	61.3	52.6	77.7
Sunflower seed	17.6	81.9	43.5	92.4	32.8

1/ Thousands. 2/ Millions. 3/ Includes water and musk melons. 4/ Includes potatoes. n.a. = not available

Sources: Vunshna turgoviya na narodna republika Bulgariya: Statisticheski sbornik 1955-1961, and 1956-62, and Statisticheski godishnik narodna republika Bulgariya, 1964.

and farmer's markets which operate more or less on the basis of supply and demand in a limited market area, price changes do not always reflect overall market conditions. Due to larger government purchases of grains, sunflower seeds, tomatoes, grapes, prunes, meat, milk, and eggs, the supplies of these in state stores were probably better in the fall of 1965 than a year earlier. Prices for beans, potatoes, vegetables, and fruit were undoubtedly higher in the collective farm markets and these commodities were in short supply in state stores.

Foreign trade: The volume of Bulgarian agricultural imports in recent years has been increasing steadily from the 1955-59 average. Grain imports have exceeded 100,000 tons in every year except 1961. Sugar imports have shown the greatest increase, rising from the

1955-59 average of approximately 6,000 tons to almost 118,000 tons in 1963 (table 20). Annual cotton imports are currently about 15,000 tons greater than the 1955-59 average. Since 1958 Bulgaria has also imported some corn and barley. Average annual imports for the period 1958-62 amounted to approximately 30,000 tons and 40,000 tons respectively.

Bulgaria is an exporter of hogs for slaughter, eggs, grapes, other fresh fruit, tomatoes, canned vegetables and puree, oilseeds, wine, tobacco, rose oil, and mint and other aromatic oils (table 20).

Because of the poor 1965 harvest of corn and other feeds, a sizable increase in the imports of feed grains could develop in 1966. Alternatively it would appear that the large wheat crop should reduce food grain imports. However, Bulgaria imported about 100,000 tons of wheat from Greece in 1965 for livestock feed. On the basis of current government purchases and the general supply, exports of livestock products, grapes, and wine should have increased in 1965. On the other hand some decrease in vegetables, fruit, tobacco, and oilseed exports may have occurred.

Most of Bulgaria's trade is with the Soviet Union and Eastern Europe, with which she exchanges agricultural products for manufactured products. Trade with Western countries has increased, but is hampered by foreign exchange difficulties.

Although small, Bulgarian trade with the United States has increased since 1959, when diplomatic relations with that country were restored. U.S. agricultural exports to Bulgaria in 1964 totaled $4.4 million, including 2.2 million pounds of inedible tallow, 19,000 bales of cotton, 460,000 bushels of corn and 12,000 short tons of soybean oil cake. U.S. agricultural imports from Bulgaria in 1964 totaled $951,000 of which wheat, rose oil, cheese and paprika accounted for over $760,000

YUGOSLAVIA

Production: Agricultural production in Yugoslavia dropped by about 7 percent in 1965 compared with 1964, and was almost equal to the 1963 level. It was still above the 1957-59 average however (table 1). An increase in livestock production was outweighed by a sharp decline in crop output.

Heavy rains in October and November of 1964 delayed fall sowing and caused a 20 percent cutback in the total sown area of winter wheat. Limited snow cover increased winterkill. Although spring rains were favorable for fall-sown grain crops, the accompanying cool temperatures delayed the development of fruits and vegetables. Very heavy rains during the first part of May also caused widespread flooding and extensive damage to thousands of hectares of field crops. Then drought prevailed from July until the middle of October.

The effects of these capricious weather conditions were evident in the production of most crops (table 21). Wheat production was down 7 percent compared with 1964 even though yields were about 16 percent higher. The quality of the wheat crop, however, was reported to be good. Output of corn, the other major grain, totaled 5.9 million tons, 1.1 million tons lower than in 1964 due to the prolonged drought. Nevertheless, the corn crop was larger than in any year except 1964, because of more hybrid seed being sown and more fertilizer being used. Rye production was down in 1965 due to a decline in both area and yield. Barley output rose with a further expansion in area; area has been increasing since 1963 and this trend is expected to continue. Oat production also increased with an expanded area. The output of beans and peas, however, was down in 1965.

The combination of a cool, wet spring and a dry summer reduced vegetable and fruit output. Apple output was down about 30 percent, pears were down almost 50 percent, and plums were down sharply. Production of hops also fell off in 1965.

Table 21.--Yugoslavia: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 1/	1957-59 average	1962	1963	1964	1965 1/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	3,227	3,510	4,140	3,700	3,440	2,030	2,130	2,140	2,100	1,680
Rye	262	169	156	175	160	247	177	157	157	150
Barley	550	475	524	534	680	392	351	350	369	405
Oats	382	305	345	293	310	362	310	315	306	320
Corn	5,427	5,270	5,380	6,960	5,900	2,520	2,460	2,410	2,430	2,400
Potatoes	2,893	2,630	3,020	2,820	2,750	284	301	321	320	300
Sugar beets	1,977	1,870	2,670	2,830	2,500	78	75	96	86	88
Sunflower seed	96	161	231	260	245	81	97	140	146	145
Tobacco	49	30	54	66	65	35	37	53	65	65
Livestock products:										
Meat 2/	386	509	490	544	575					
Poultry 3/	63	66	67	73	80					
Other meat 4/	45	47	45	48	50					
Milk, cows 5/	2,217	2,219	2,170	2,238	2,200					
Wool	14	13	13	12	11					
	Million units									
Eggs	1,516	1,420	1,643	1,733	1,691					
Livestock: 6/	1,000 head									
Cattle	4,948	5,884	5,355	5,106	5,219					
Hogs	4,529	5,161	5,013	6,106	6,978					
Sheep	10,832	11,143	10,055	9,726	9,433					
Horses	1,292	1,226	1,175	1,143	1,109					

1/ USDA preliminary estimate except livestock numbers. 2/ Beef, veal, pork, mutton, lamb and goat, carcass weight. 3/ Dressed weight. 4/ Horse meat and offals, carcass weight. 5/ Converted from hectoliters at 1.03082. 6/ Number as of Jan. 15.

Source: Statisticki Godisnjak SFRJ, 1965.

A 16 percent increase in the sown area of cotton helped to raise cotton production substantially in 1965. Because of the limited opportunity for further expansion of the small cotton acreage in Yugoslavia there is little likelihood that the present heavy volume of cotton imports will be lessened. Yields of sugar beets remained about the same as in 1964, but a 12 percent drop in area reduced output to below the levels of 1963 and 1964. Both a smaller area and adverse weather accounted for the drop in sunflower seed output. A smaller area also accounted for the drop in tobacco output.

The good feed crop in 1964 led to increases in cattle and hog numbers at the beginning of 1965. A further increase in cattle numbers developed during 1965 because of the relative profitability of feeding cattle as compared to hogs. Although the good 1964 corn crop and high meat prices contributed to the substantial increase in hog numbers in January 1965 over a year earlier, hog numbers probably declined in 1965. The smaller corn crop in 1965, higher feed costs, and large lard stocks are factors working in this direction. Sheep and horse numbers continued the downward trend of recent years. In the case of sheep, an unfavorable feed/product price ratio for wool, mutton, and milk is the explanation. The decline in horse numbers is relatively slow due to the continuing need for horsepower, especially on private farms.

Output of all types of meat except mutton and goat increased in 1965. Milk and egg production declined slightly in 1965 due to feed difficulties in the last half of the year.

Inputs: Inputs of capital, machinery, and fertilizer continued to increase in Yugoslavia in 1965. However, most of these inputs are allocated to the socialized sector. Tractor numbers reached 45,364 by the end of 1964 an increase of slightly more than 2,000. This was more than twice the number available in 1958. All but about 5,000 of the tractors are in the socialized sector. Grain combines increased from 9,500 to 10,500 during 1964; all are in the socialized sector. The application rate of mineral fertilizer has increased from 15.7 kilograms of plant nutrients per hectare of sown area in 1956 to 73 kilograms per hectare in 1964 (table 25). Of the 2.2 million tons of fertilizer used in 1964, half was allocated to the socialized sector. In the use of mineral fertilizer, Yugoslavia stands in the midrange of the countries of Eastern Europe--slightly higher than Poland and Hungary (table 25).

Of the total cultivated area of 10.3 million hectares in 1964, only 1.3 million hectares belonged to the socialized sector. The characteristics of private farming in Yugoslavia (small scale and poorly equipped), the disproportionate allocation of inputs, and the limitations on private farming, have kept this sector's performance in terms of yields generally below that of the socialized sector. In 1965 the output of the socialized sector was reported to be up about 2.5 percent over 1964 but this was outweighed by a drop of 7.5 percent in the private sector.

Policy: Agricultural policy decisions in Yugoslavia in 1965, as in most of the other East European countries, were influenced by major economic changes which affected the entire economy.

As in Poland, agriculture is important in the economy--in 1964 it contributed over 27 percent to the national income and occupied more than 50 percent of the working population--and only a small proportion of agriculture has been collectivized. For these reasons the performance of agriculture is more important to overall economic performance than is the case in East Germany or Czechoslovakia.

Agricultural policy in Yugoslavia has been directed toward a gradual improvement and expansion of the small socialized sector with the expectation that by attrition and example of superior performance the private sector

would gradually yield to the socialized sector. This transformation was further pushed by imposing a variety of restrictions on private agriculture--such as the limitation of private holdings to 10 hectares--and by establishing organizations through which private farmers could be induced to cooperate with socialized enterprises in various operations. In 1964 for example, 17 percent of the privately held arable land (32 percent of all private farms) was used jointly with the agricultural cooperatives and socialized holdings. Although 91 percent of the cattle, 95 percent of the sheep, 84 percent of the hogs, and 95 percent of the poultry is privately owned, some 17 percent of the private farmers were engaged in livestock production in association with agricultural cooperatives and state farms.

Although state purchase prices for agricultural products were purposely depressed in the socialized sector until 1960, pressures on the demand side and a favorable change in government policy began pushing them up sharply in that year; by 1964 state purchase prices were 80 percent above the 1960 level. During 1960-64 agricultural prices in the socialized sector rose much more rapidly than industrial prices and the rise in 1964 was particularly sharp. In the private sector agricultural prices rose about 80 percent during the period 1955-62, less than in the socialized sector, but from 1960 to 1964 agricultural prices in the private sector increased over 100 percent, at current prices.

The policy measures effected in July 1965 suggest that the use of higher prices along with additional emphasis on incentives and inputs will be continued. Agricultural producer prices, for example, were increased one-third over those of 1964. Subsidies have been retained only for meat-type hogs and milk. More reliance on market forces in both domestic and foreign trade is also anticipated.

The Yugoslav government anticipates that all types of farms will benefit from the higher prices and that agricultural investment will increase, thus decreasing the present discrepancy between the development of agriculture and industry.

Guaranteed minimum prices have been established for a number of commodities--including grain and livestock--at about 15 percent below market prices. Should prices fall below this level the government would be obligated to purchase the quantities offered by producers. Two specific objectives of the price increases are to relate grain prices to wheat in such a way that wheat production is stimulated and to relate livestock prices to feed grain prices so that feeding livestock becomes more profitable than the sale of feed grains.

Investment in the socialized sector is being increased directly from government funds. Additionally, price incentives and other measures are expected to encourage greater investment from the farms' own accounts. The private sector, which invests about 8 percent of its gross income, is also expected to increase investment as a result of the higher prices. In order to encourage fertilizer use, the government has amended its credit program and has authorized the extension of credits for fertilizer to private farmers in 1965.

The Yugoslav and Polish programs parallel each other. Both contain major measures to stimulate output through price increases, larger inputs of capital, machinery, and fertilizer and attempts to improve the management and operation of agriculture. In both countries no major upheaval in the structure of land ownership is anticipated and reliance is placed on attracting private farmers, especially those with very small holdings, into progressively more cooperative and eventually socialized relationships. In the meantime, an effort is being made by the government to stimulate agricultural output at all levels of socialized and private farming.

Food situation: The diet in Yugoslavia has improved gradually since 1950, but during

the last 4 years shortages and higher prices have plagued consumers. The supply of vegetables and fruits in 1965 was far below that of a year earlier and prices for these products increased sharply. Larger imports of potatoes, apples, and vegetables are expected during 1965/66, but these will not entirely offset the shortages. For other commodities the problem is essentially one of short supply and high prices.

Retail prices for meat and meat products increased sharply in 1965. At these high prices the quantity of meat demanded declined. Some Yugoslav officials have complained about the accumulation of large stocks of meat. Adding to this problem, the summer drought forced early sale of livestock to processors, further compounding storage difficulties. Although some efforts have been made to make feed available to farmers, the danger of heavy slaughtering still persists.

Retail prices for milk have increased sharply, cutting down consumption somewhat. Egg prices rose substantially at the retail level. The supply of lard and vegetable fats is expected to be about the same as last year. Sugar consumption has been increasing; additional supplies are expected from imports during the current consumption year.

As early as August, the shortage of livestock feed stimulated heavy sales of livestock animals. Although livestock prices received by producers were depressed, the demand for meat was reduced by the increased retail prices, and the pipeline from slaughterhouse to market was filled. The low quality of the meat limited its export potential.

Problems such as this are indicative of many facing the country as a result of rising incomes and slow growth in the domestic food supply. For the present, the retail price of food will probably remain high while the government hopes the higher producer prices will stimulate increased production. There is no indication that heavy imports are considered as a means of improving the food situation.

Foreign trade: Agricultural commodities account for approximately 20 percent of the total value of Yugoslavia's exports. Principal agricultural exports are animals for slaughter meat and meat products, and tobacco. Of lesser importance are fruits, wine, and sugar (table 22).

The most important change in the composition of agricultural exports over the period 1960-64 has been the rapid rise in meat exports and the decline in grain exports. Exports of eggs have declined; the same is true of feed grains. Exports of other commodities--notably corn, fruit, sugar, and oilseeds--have shown substantial annual fluctuations.

The situation during the first 9 months of 1965 suggests that for the entire year exports of livestock and livestock products were up approximately 20 percent from 1964, with beef and veal accounting for most of the increase. The only declines in exports of livestock and livestock products were in horsemeat and horses for slaughter. Exports of fruits and vegetables were down while exports of other field crops were about the same.

The agricultural share of Yugoslavia's total imports declined from 20.6 percent in 1962 to 13.1 percent in 1964. Major imports are wheat and wheat flour, fruit, sugar, vegetable oils, and cotton. Substantial, but less significant, quantities of oilseeds, wool, tropical products, feed grains, and rice are imported (table 22).

Feed grain imports have risen steadily in recent years and are expected to be large during 1965. Sizable increases in imports of fruit, tropical products, hides and skins, cotton, jute, wool, and vegetable oils have taken place.

There has been a steady increase in the value and quantity of fruit imports in recent years. Imports of crop products have fluctuated

Table 22.--Yugoslavia: Principal agricultural imports and exports, average 1955-59, annual 1960-64

Commodity	1955-59 average	1960	1961	1962	1963	1964
	- - - - - - 1,000 metric tons - - - - - -					
Imports:						
Pigs, for slaughter	3.0	12.0	16.2	22.5	9.0	11.6
Milk, powdered	18.1	16.9	20.9	18.1	23.1	19.7
Cheese	5.6	0	1/	0	1/	1/
Eggs	.1	2.0	2.4	3.6	2.6	3.8
Wheat and wheat flour	1077.9	158.1	819.3	781.1	1438.3	602.4
Rice, milled	29.1	43.3	13.6	4.1	38.9	36.9
Coarse grain	17.8	3.8	1.1	74.2	101.4	177.2
Fruit, citrus	16.2	40.1	45.8	39.8	39.4	62.6
Potatoes	10.1	10.2	1.0	22.8	2/7.6	2/1.7
Sugar, refined	81.5	122.7	107.3	131.4	54.6	106.3
Coffee beans (not roasted)	4.0	9.2	9.6	10.3	17.8	15.7
Cocoa beans	2.5	3.5	6.6	3.6	9.6	6.7
Tobacco	.6	1/	.4	9.9	10.1	3.4
Hides and skins	17.2	26.3	25.0	27.3	29.0	38.6
Oilseeds	21.2	12.0	9.4	12.3	23.5	25.4
Rubber, crude	7.4	12.1	14.4	13.9	15.1	17.0
Cotton	41.2	42.9	56.0	56.0	66.9	81.7
Jute	5.1	5.9	6.9	11.1	15.0	12.3
Wool	4.9	6.4	12.1	6.4	11.5	14.7
Edible vegetable oils	28.4	32.1	38.4	41.4	30.4	47.1
Lard	26.4	0	1.7	2.2	7.4	9.4
Tallow	10.9	6.2	9.9	15.2	11.8	6.0
Exports:						
Cattle, for slaughter	33.2	36.5	55.6	37.0	44.5	19.1
Sheep, for slaughter	7.0	9.3	15.8	8.7	7.2	.5
Hogs, for slaughter	4.7	4.5	1.1	1.1	.1	1/
Horses, for slaughter	7.2	11.3	27.4	29.1	27.7	16.8
Meat, fresh	19.5	36.7	51.2	88.4	89.4	110.5
Meat, canned	10.1	21.1	23.4	21.0	23.7	30.3
Cheese	1.5	.6	.6	8.8	.5	.9
Eggs, fresh equivalent	13.1	18.4	13.2	8.1	6.6	6.7
Corn	198.1	513.5	376.3	27.8	104.0	17.7
Other coarse grains	43.7	5.5	5.1	19.4	5.3	2.9
Fruit, fresh	36.9	22.3	15.8	61.7	33.2	61.2
Prunes	16.9	19.6	15.2	14.6	33.0	17.6
Fruit pulp	22.1	15.4	13.4	16.2	16.0	13.6
Potatoes	10.5	1.0	14.9	.2	.7	.3
Beans, dry	6.3	3.4	10.3	.8	.3	.4
Hops	2.6	4.7	5.5	3.9	4.7	4.8
Sugar, refined	14.8	85.5	24.6	21.2	25.0	12.3
Wine 3/	542.0	543.1	395.3	513.5	453.2	519.6
Tobacco	18.0	18.0	15.9	15.3	16.8	21.6
Oilseeds	2.2	12.4	4.5	1.7	3.8	7.1
Hemp, all	11.1	15.5	13.4	10.3	13.5	10.3

1/ Less than 50 tons. 2/ Including seed. 3/ 1,000 hectoliters (1 hectoliter = 26.418 U.S. gallons).

Sources: Statistika Spoljne Trgovine S.F.R. Jugoslavije, annual issues 1955 through 1964.

greatly over the period 1957-64 and were exceptionally low in 1960 and exceptionally high in 1963; they fell almost 30 percent in 1964. Imports of quality livestock products have increased fairly steadily during the period, but jumped significantly in 1964.

The United States has supplied from 13 to 20 percent of total Yugoslav imports in recent years, and approximately 40 percent of agricultural imports. Wheat and wheat flour is the principal U.S. agricultural export to Yugoslavia; shipments of this commodity have ranged from approximately 160,000 tons in 1961 to 1.4 million tons in 1963. A substantial increase in Yugoslav wheat imports can be expected during 1965/66 in view of the shortfall in domestic production last year. The U.S. share of the Yugoslav cotton market has been declining while total cotton imports have been increasing. The United States supplied almost 70 percent of total Yugoslav cotton imports in 1959, but only slightly more than 25 percent in 1964.

Under the new program which had as a basic objective increasing exports and reducing imports--by the devaluation of the dinar, foreign goods become more expensive domestically and Yugoslav goods cheaper--it is hoped by the government that agricultural productivity at home will be stimulated and eventually agricultural exports will increase. Exports of agricultural products are no longer subsidized, which suggests that world agricultural prices will have a greater impact upon Yugoslavia than in the past.

Yugoslavia is usually the second largest U.S. agricultural export market in Eastern Europe. Yugoslavia imported $94.6 million in agricultural products from the United States in 1964. Wheat, cotton, soybean oil and cake, corn, lard and nonfat dry milk were the most important commodities. United States agricultural imports from Yugoslavia in 1964 totaled $15.9 million. These imports consist primarily of starch, meat and tobacco.

Table 23.--USSR and Eastern Europe: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65 1/

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 2/	1957-59 average	1962	1963	1964	1965 2/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	70,544	71,663	57,467	75,562	67,200	76,459	77,412	74,474	78,245	74,946
Rye	26,913	23,569	21,884	23,124	25,739	25,293	23,397	21,132	23,001	23,257
Barley	14,267	22,542	23,058	30,313	26,076	12,686	19,484	27,158	24,992	23,292
Oats	17,416	11,000	8,842	8,163	9,077	18,080	10,024	8,774	8,574	8,672
Corn	21,948	17,544	25,781	28,699	21,115	10,942	14,744	14,951	12,919	11,114
Potatoes	142,433	126,303	137,055	159,846	143,015	14,599	13,712	13,505	13,458	13,339
Sugar beets (factory)	73,432	75,692	78,431	118,253	103,798	3,674	4,519	5,075	5,527	5,289
Sunflower seed	3,994	5,515	5,137	6,469	6,021	4,511	5,303	5,369	5,568	5,810
Rapeseed	324	578	401	495	727	266	389	338	403	484
Tobacco	379	348	456	514	464	344	355	453	432	432
Cotton, lint	1,519	1,481	1,788	1,812	1,919	2,215	2,446	2,543	2,522	2,522
Livestock products:										
Meat 3/	10,468	12,031	12,443	11,428	12,628					
Poultry 4/	1,064	1,307	1,315	1,160	1,333					
Milk 5/	78,330	84,389	81,631	83,933	88,476					
Wool	395	452	456	433	414					
	Million units									
Eggs	39,522	48,806	47,013	46,771	48,834					
Livestock: 6/	1,000 head									
Cattle	95,430	114,916	119,265	117,554	119,621					
Hogs	85,427	112,823	113,864	87,641	104,074					
Sheep	157,884	179,585	180,552	175,160	166,648					
Horses	19,441	15,900	14,886	14,057	13,314					

1/ Includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, USSR and Yugoslavia; excluding Albania. 2/ USDA preliminary estimates. 3/ Carcass weight (all liveweight country data converted at uniform coefficient). 4/ Dressed weight. 5/ Primarily cows' milk, see individual country tables. 6/ For census date see individual country tables.

Table 24.--Eastern Europe: Area and production of principal crops, output of animal products, and number of livestock, average 1957-59, annual 1962-65 1/

Item	Production					Area				
	1957-59 average	1962	1963	1964	1965 2/	1957-59 average	1962	1963	1964	1965 2/
	1,000 metric tons					1,000 hectares				
Field crops:										
Wheat	16,144	17,263	17,467	17,862	20,700	10,227	10,001	9,865	10,345	9,946
Rye	11,765	9,853	10,184	10,324	11,239	7,611	6,497	6,132	6,201	6,257
Barley	5,823	6,868	6,658	6,513	7,067	3,195	3,184	3,767	3,292	3,292
Oats	5,633	5,400	5,142	4,263	4,477	3,684	3,124	3,074	2,874	2,672
Corn	16,175	15,492	17,281	19,499	16,315	7,207	7,744	7,951	7,819	7,914
Potatoes	63,938	63,573	72,413	76,146	68,015	4,985	5,012	5,005	4,958	4,839
Sugar beets (factory)	27,444	28,257	34,379	37,953	33,798	1,221	1,349	1,325	1,417	1,372
Sunflower seed	791	1,099	1,199	1,229	1,145	758	913	979	958	963
Rapeseed	324	578	401	495	727	266	389	338	403	484
Tobacco	256	229	314	362	329	244	255	283	317	317
Cotton, lint	20	19	17	17	15	84	56	63	62	62
Livestock products:										
Meat 3/	4,612	5,106	4,948	5,303	4,528					
Poultry 4/	426	507	515	560	583					
Milk 5/	28,730	29,789	29,631	29,933	30,476					
Wool	76	85	87	88	89					
	Million units									
Eggs	15,922	18,706	18,513	20,071	20,834					
Livestock:	1,000 head									
Cattle	29,130	32,816	32,265	32,154	32,521					
Hogs	40,827	46,123	43,864	46,741	51,274					
Sheep	38,484	42,085	40,852	41,260	41,448					
Horses	7,541	6,232	5,786	5,557	5,414					

1/ Includes Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, Yugoslavia; excludes Albania and USSR. 2/ USDA preliminary estimates. 3/ Carcass weight (all liveweight country data converted at uniform coefficient). 4/ Dressed weight. 5/ Primarily cows' milk, see individual country tables. 6/ For census date see individual country tables.

Table 25.--USSR and Eastern Europe: Agriculture in the economy and major agricultural inputs, by country 1964

Item	Unit	USSR	Poland	East Germany	Czecho-slovakia	Hungary	Rumania	Bulgaria	Yugoslavia
Agriculture in the economy:									
Share of gross production 1/	Percent	2/22	20	9	12	21	29	32	26
Share of exports 3/	Do.	12	21	n.a.	5	21	24	43	30
Share of imports 3/	Do.	26	23	27	20	9	13	6	13
Rural population 4/	Do.	47	51	28	18	36	67	60	50
Inputs in agriculture:									
Land:									
Agricultural land 5/	Mil. ha.	540	20	6.4	7.2	7.0	14.7	5.7	14.9
Arable land 5/	Do.	223	16	4.7	5.1	5.1	9.8	4.8	7.6
Sown area 6/	Do.	213	15	4.7	5.1	5.0	9.8	3.9	7.6
Labor:									
Agricultural labor force 7/	Million	45	6.5	1.3	1.2	1.7	7.4	2.3	4.6
Share of total labor force 7/	Percent	38	47	17	20	36	58	48	55
Sown area per worker 7/	Hectares	4.7	2.3	3.6	4.0	2.9	1.3	1.7	1.7
Tractors:									
Tractors, physical units 8/	Thousand	1,538	107	118	96	59	75	35	45
Tractors, 15 hp. units 8/	Do.	2,821	126	149	164	78	120	56	115
Average hp. per tractor 8/	Hp.	18	18	19	24	20	24	24	40
Sown area per 15 hp. units 8/	Hectares	76	122	32	31	64	82	70	66
Fertilizer:									
Utilization of plant nutrients (Active substances):									
Arable land 9/	Kg./ha.	23	63	254	10/94	68	16	36	73
Sown area 9/	Do.	24	64	254	10/132	68	16	45	73

1/ As defined and calculated by the respective countries and not strictly comparable with GNP concept. The share of agriculture in national income as calculated by these countries is normally higher. Bulgaria, Hungary, and Yugoslavia, 1963. 2/ National income as calculated by the Soviet Union (Narodnoe khozyaystvo SSSR v 1964 g.). 3/ Bulgaria 1963. 4/ Beginning of year; Poland and Czechoslovakia--1961, Bulgaria 1963. 5/ USSR and Bulgaria--1963; all other countries mid-year or end of year 1964. 6/ Bulgaria 1963; all other countries 1964. 7/ Poland 1960; Hungary and Yugoslavia--1961; Bulgaria 1962. 8/ End of year, Bulgaria 1963. 9/ Bulgaria and Poland--1963. Calculated on the basis of reported consumption of deliveries of fertilizer to agriculture. 10/ 1964 or 1963/64. n.a. = not available

Table 26.--USSR and Eastern Europe: Socialization of agriculture, by country, 1964 1/

(Percentage of total in agriculture)

Resource	USSR	Poland	East Germany	Czecho-slovakia	Hungary	Rumania	Bulgaria	Yugoslavia
				Percent				
Land: 2/								
Agricultural	99	14	93	89	94	91	88	13
Arable	97	14	97	93	94	95	86	14
Labor force 3/	80	8	98	83	85	90	96	17
Tractors, physical units 4/	100	88	100	100	100	99	100	89
Livestock: 5/								
Cattle	71	12	63	85	54	52	77	9
of which cows	58	10	53	78	43	38	65	5
Hogs	73	13	60	76	41	39	67	14
Sheep	79	14	68	68	87	52	63	5
Agricultural output:								
Total 6/	64	7	n.a.	79	n.a.	n.a.	77	24
Grains	99	12	95	91	68	91	94	19
Potatoes	40	7	91	72	51	56	64	3
Sugar beets	100	15	99	99	99	100	99	66
Meat	58	12	n.a.	80	50	44	65	26
Milk	58	11	n.a.	80	44	45	74	16
Eggs	27	6	n.a.	51	12	1	43	10

1/ "Socialization of agriculture" means the extent to which "socialist" types of farm units, including collective farms, state farms, etc., have replaced individually owned farms. Private plots and livestock of workers in the "socialized" sector are not included in that sector. 2/ Bulgaria 1963; other countries end of year or mid-year 1963. 3/ Share of the agricultural labor force deriving at least part of its income from work in socialized agriculture. Bulgaria, Hungary and Yugoslavia estimated. In the Soviet Union the remaining 20 percent includes the estimated number of persons working exclusively on private plots and a small percentage of collective farm workers who do not work on the collective farms. 4/ End of year. 5/ Hungary--March 1963; Bulgaria--January 1964; Poland--June 1964; Soviet Union, Czechoslovakia, East Germany, Rumania, and Yugoslavia--end of year 1964. 6/ Value of output. Bulgaria and Yugoslavia--1963. n.a. = not available

Table 27.--Conversion equivalents

Pounds per bushel

Wheat and potatoes	60
Rye and corn	56
Barley	48
Oats	32

One kilogram	equals	2.2046 pounds
One centner or metric quintal	"	220.46 pounds
One metric ton	"	10. centners or 2204.6 pounds
One hectare	"	2.471 acres
One acre	"	0.4 hectare
One kilometer	"	0.6 mile

Metric tons to bushels

One metric ton	Bushels
Wheat and potatoes	36.743
Rye and corn	39.368
Barley	45.929
Oats	68.894

Bushels to metric tons

One bushel	Metric tons
Wheat and potatoes	.02722
Rye and corn	.02540
Barley	.02177
Oats	.01452

To convert centners per hectare to bushels per acre, multiply by:

Wheat and potatoes	1.487
Rye and corn	1.593
Barley	1.8587
Oats	2.788

To convert bushels per acre to centners (metric quintals), per hectare multiply by:

Wheat and potatoes	0.6725
Rye and corn	0.6277
Barley	0.5380
Oats	0.3587

One metric ton of seed cotton = 1.562 bales of 480 pounds.
One metric ton of ginned cotton = 4.593 bales of 480 pounds.